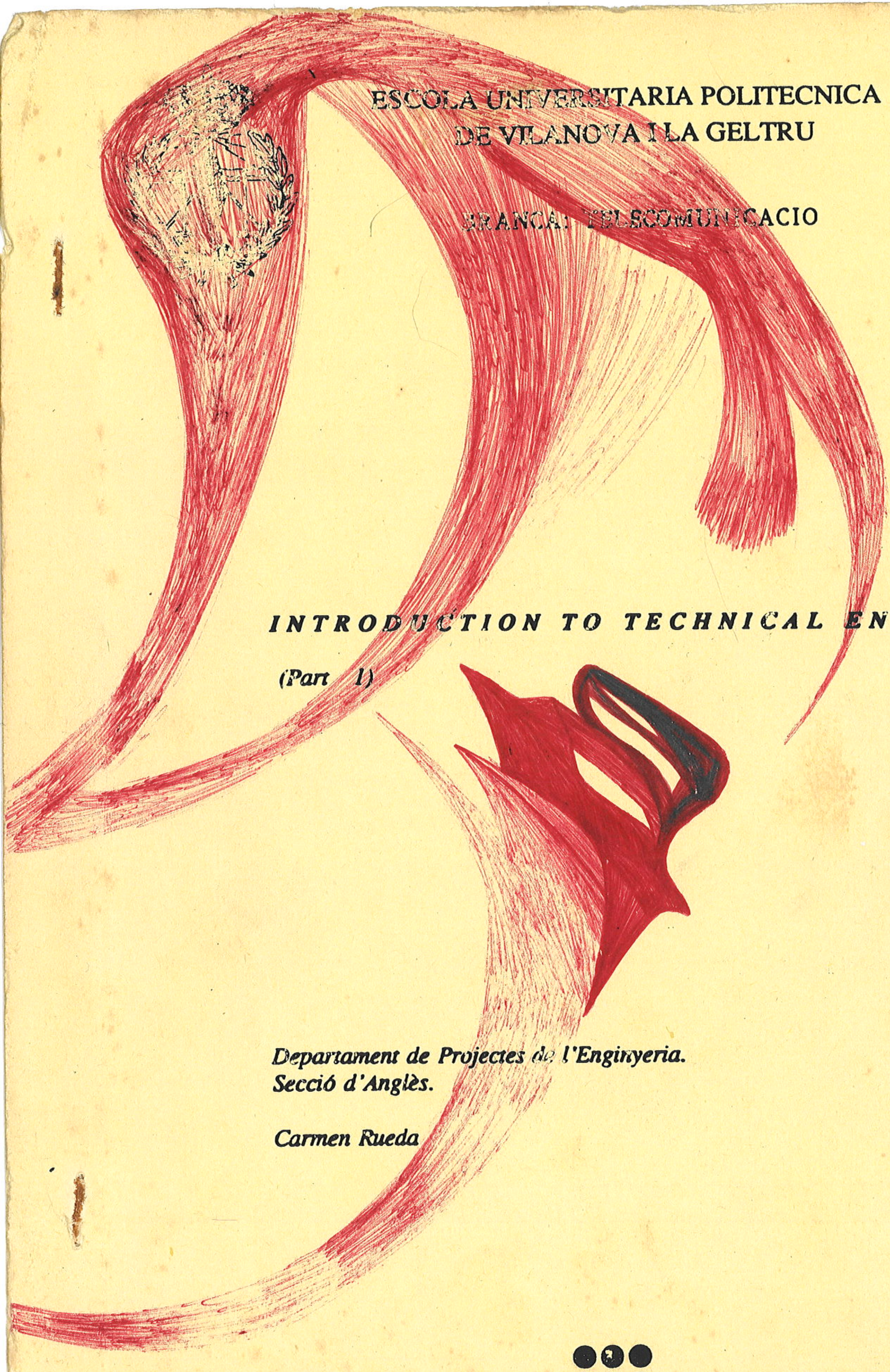
ESCOLA UNIVERSITARIA POLITECNICA
DE VILANOVA I LA GELTRU

I

BRANCA: TELECOMUNICACIO



INTRODUCTION TO TECHNICAL ENGLISH 1

(Part 1)

Departament de Projectes de l'Enginyeria.
Secció d'Anglès.

Carmen Rueda

UPC

UNIVERSITAT POLITECNICA DE CATALUNYA

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UNIT 2. MEASUREMENTS AND DIMENSIONS IN PHYSICAL DESCRIPTION

UNIT 3. SPACE ORDER IN PHYSICAL DESCRIPTION

UNIT 4. TIME ORDER IN PHYSICAL DESCRIPTION

19.10.94

UNIT 1

1. INTRODUCTION TO PRONUNCIATION AND PHONETic SYMBOLS.

Key to phonetic symbols

Vowels and diphthongs

1 iː *as in* **see** /siː/
2 ɪ *as in* **sit** /sɪt/
3 e *as in* **ten** /ten/
4 æ *as in* **hat** /hæt/
5 ɑː *as in* **arm** /ɑːm/
6 ɒ *as in* **got** /gɒt/
7 ɔː *as in* **saw** /sɔː/
8 ʊ *as in* **put** /pʊt/
9 uː *as in* **too** /tuː/
10 ʌ *as in* **cup** /kʌp/
11 ɜː *as in* **fur** /fɜː(r)/ pel dels animals : fur
12 ə *as in* **ago** /əˈgəʊ/
diftongs ↓
13 eɪ *as in* **page** /peɪdʒ/
14 əʊ *as in* **home** /həʊm/
15 aɪ *as in* **five** /faɪv/
16 aʊ *as in* **now** /naʊ/
17 ɔɪ *as in* **join** /dʒɔɪn/
18 ɪə *as in* **near** /nɪə(r)/
19 eə *as in* **hair** /heə(r)/
20 ʊə *as in* **pure** /pjʊə(r)/

Consonants

chin : menton, barbeta
wet : humit

1 p *as in* **pen** /pen/
2 b *as in* **bad** /bæd/
3 t *as in* **tea** /tiː/
4 d *as in* **did** /dɪd/
5 k *as in* **cat** /kæt/
6 g *as in* **got** /gɒt/
7 tʃ *as in* **chin** /tʃɪn/
8 dʒ *as in* **June** /dʒuːn/
9 f *as in* **fall** /fɔːl/
10 v *as in* **voice** /vɔɪs/
11 θ *as in* **thin** /θɪn/
12 ð *as in* **then** /ðen/
13 s *as in* **so** /səʊ/
14 z *as in* **zoo** /zuː/
15 ʃ *as in* **she** /ʃiː/
16 ʒ *as in* **vision** /ˈvɪʒn/
17 h *as in* **how** /haʊ/
18 m *as in* **man** /mæn/
19 n *as in* **no** /nəʊ/
20 ŋ *as in* **sing** /sɪŋ/
21 l *as in* **leg** /leg/
22 r *as in* **red** /red/
23 j *as in* **yes** /jes/
24 w *as in* **wet** /wet/
} semivocals

The following table lists the voiced and unvoiced consonant sounds, and the way they are usually written at the end of a word:

judge : jutge
comb : pinta

Sound		Written as	
sonora voiced	sorda unvoiced	voiced	unvoiced
[b]	[p]	-b(e)	-p(e)
[d]	[t]	-d(e)	-t(e), -ght
[g]	[k]	-g, -gg	-c, -k, -ck
[dʒ]	[tʃ]	-ge, dge,	-ch, -tch
[v]	[f]	-ve	-f(e)
[ð]	[θ]	-th(e)	-th
[z]	[s]	-ze, -zz	-s, -ss, -ce
[ʒ]	[ʃ]	*	-sh
[h]	-	-	-
[m]	-	-m(e), -mb	-
[n]	-	-n(e), -gn	-
[ŋ]	-	-ng	-
[l]	-	-l, -ll	-
[r]	-	-r(e)	-

mathematics : /ˌmæ θɪ ˈmæ tɪks/

ˈ: justament abans de la síl·laba tónica .

hi han paraules que dues dos accents : hi han dos cops de veu, dues síl·labes accentuades, com paraules molt llargues ; un accent abaix i un adalt.

Les paraules monosíl·labiques no duen accent fonètic

EXERCISE.

1) Try to work out the spelling of these words:

- /ˈmetl/ metal
- /ˈaɪən/ iron (ferro)
- /ˈsætəlaɪt/ satellite (satèlit)
- /ˌendʒɪˈnɪə/ engineer
- /mɪˈkænɪk/ mechanic
- /ˈkemɪstrɪ/ chemistry
- /kəmˈpjuːtə/ computer
- /ˈsaɪəns/ science
- /kəˌmjuːnɪˈkeɪʃən/ communication
- /ɪlekˈtrɒniks/ electronics
- /ˈkɒpə/ copper (coure)
- /ˈtʃeɪndʒ/ change
- /hiːt/ heat (calor)
- /hɪt/ hit (pegar)
- /ˈməʊʃən/ motion (moviment)
- /ˈməʊtə/ motor
- /məˈtɪərɪəl/ material (material)
- /ˈlɪkwɪd/ liquid (liquid)
- /ˈfʌŋkʃən/ function
- /ˈsəːkɪt/ circuit
- /ˌæplɪˈkeɪʃən/ application

- /ˈɪŋglɪʃ/ english
- /ˈtemprɪtʃə/ temperature
- /waɪə/ wire (cable)
- /ˈenədʒɪ/ energy
- /ˌsemɪkənˈdʌktə/ semiconductor
- /ˌtrænzˈmɪʃən/ transmission
- /laɪn/ line (linia)
- /kəˈnektə/ connector
- /ˌreɪdɪˈeɪʃən/ radiation
- /swɪtʃ/ switch
- /ˌtrænsˈfɔːmə/ transfermer
- /ˈprɪntə/ printer (impressora)

What´s the difference in pronunciation? Use your dictionary to work it out.

- **SON / SUN** /sʌn/
- **EAT / IT** /iːt/ /ɪt/
- **MEET / MEAT** /miːt/
- **TO / TWO / TOO** /tuː/
- **FOUR / FOR** /fɔː(r)/ (r) opcional
- **SHEEP / SHIP** /ʃiːp/ /ʃɪp/ sheep: ovella
- **FOOT / FOOD** /fʊt/ /fɔːd/
- **HAT / HEART / HURT** /hæt/ /hɑːt/ /həːt/
- **LOUD / LOW / LAW** /laud/ /ləu/ /lɔː/
- **HERE / HEAR / HAIR** /hɪə/ /hɪə/ /heə/
- **SO / SAW** /səu/ /sɔː/
- **AMBITION / VISION** /æm'bɪʃan/ /'vɪʒən/
- **CHIP / SHIP / JEEP** /tʃɪp/ /ʃɪp/ / /dʒiːp/
- **THUS / THUMB** /ðʌs/ /θʌm/
- **SING / SIN** /sɪŋ/ /sɪn/

thus: per lo tant

thumb: dit gros

FUTURE

WILL (SHALL { I / He) { Predictions / Future states of something/somebody (sth / sbd)

TO BE GOING TO { Plans / Resolutions with no fixed date

PRESENT CONTINUOUS { complement circumstancial de temps / futur proper

No confondre won't amb want /wont/

FRASE EN ANGLES

SUBJECTE + AUXILIAR (SI CAL) + VERB PRINCIPAL + OBJECTE INDIRECTE (SI EN HI HA, a quién) + OBJECTE DIRECTE (SI CAL, què cosa) + HOW (com es fa una cosa, complement circumstancial de mode) + WHERE (C.C. LLOC) + WHEN (C.C TEMPS)

L'únic canvi admès és WHEN davant de la frase

Exp: He gave me this book yesterday
He drove his car carefully on the highway this morning

26.10.94

2. INTRODUCTION: FUTURE TENSE & SIMPLE PAST (review).

2.I THE FUTURE TENSE "WILL".

↗ acompanya un verb principal

"Will" is the auxiliary used to make the future tense. It is the same for all persons.

↓ spoken English (anglès parlat)

e.g. I will work
You will work
He will work — Contraction: I'll work
We will work — You'll work
You will work .
They will work .

You use "Will" for **predictions** and **future states**.
e.g. You will win the competition.
The centre will have a computer hall.

Negative statement: WILL + NOT = $\boxed{\text{WON'T}}$ /wəunt/
e.g. I won't work (Spoken English)
I will not work (Written English)

Questions:
e.g. He will work
Will he work? Yes, he will.
No, he won't.

EXERCISES.

1) Make these sentences negative and then make questions with them.

a) He will pass his exam if he studies hard.
He won't pass his exam if he doesn't studies hard
Will he pass his exam if he studies hard?

b) The new building will have three floors.
The new building won't have three floors
Will the new building have three floors?

c) They will be the first European astronauts to go to the moon.
They won't be the first European astronauts to go to the moon
Will they be the first European astronauts to go to the moon?

2) Put these words in the correct order:

a) the computer / be / tomorrow ? / will / functioning
Will the computer be functioning tomorrow?

b) you / be / at / next / home / weekend ? / won't
Won't you be at home next weekend?

c) month / computer / will / the new / have / he / next
He will have the new computer next month

Amb WHERE
WHEN } WILL WE WORK?

Amb WHO
WHICH
HOW MUCH
WHAT
HOW MANY } WILL WORK?

Quan es pregunta pel subjecte de la frase no es posa el subjecte

Exp: They will build a new building in Vilanova
What will they build in Vilanova? A new building
Where will they build a new building? En Vilanova
Who will build a new building in Vilanova? They

keyboard : teclat
high-quality printer : impressora d'alta qualitat.
call up : demanar
on disk (en un menú) : disc
autoloader : autocarregador
image : /ɪmɪdʒ/
scanned : escaneado (averiguar, examinar)

d) school / next / you / week / won't / at / be
You won't be at school next week

e) get / the / that company ? / will / job / they / in
Will they get the job in that company ?
↑ conseguir

When the **subject** of a question is one of these question words WHO, WHAT, WHICH (and HOW MUCH / HOW MANY), the word order in the sentence is as follows:

e.g. They will get everything for the experiment.
Subj.

Who will get everything for the experiment ?
Subj.

However, when the information you ask about concerns the **object**, the word order is as follows:

e.g. They will get everything for the experiment.
D. Obj.

What will they get for the experiment ? Everything.
D. Obj.

3) Somebody is going to install work stations in all the main offices to get information from a microfilm library, and explains how it will work. Make questions as necessary:

a) The work station will consist of a terminal with its own keyboard and a connection to a high-quality printer.
What will the work station consist of ← de que ?

b) The operator will call up the index on his terminal
Who will call up the index on his terminal ?

c) The index will be on disk in a central computer.
Where will the index be in a central computer ?

d) The central computer will be connected to a central microfilm reader.
What will the central computer be connected to ← a que ?

e) The reader will be down in the microfilm library.
Where will the reader be ?

f) The microfilm autoloader will select the right microfilm from the library and will insert the film into the reader.
Where will the microfilm autoloader select the right microfilm from ?

g) The image will be electronically scanned and transmitted via the central computer to the work station.
How will the image be scanned ?

view: revisió

to have to : tenir que \ haver de
to need to : necessitar
} excepcions dels verbs modals

There is : hi ha
There are : hi han

Exp : How many students will there be ?
There will be two students at the laboratori
En les formes impersonals no hi ha subjecte i
s'utilitza el there

matriculation fee : taxes matrícula

h) The user will view the document on his terminal screen.
Who will view the document on his terminal screen?

i) The user will view the document on his terminal screen.
What will the user view on his terminal screen?

j) He will take a copy from the printer, if he wants to.
What will he take from the printer, if he wants to?

2.II THE FUTURE TENSE WITH MODAL VERBS.

{no tenen en infinitiu i no porten un to darrera.

Present	Simple Past	Future tense
CAN	COULD	WILL BE ABLE TO
MUST HAVE TO	HAD TO	WILL HAVE TO
NEED TO	NEEDED TO	WILL NEED TO

SHOULD
MAY (MIGHT)

2.III THE FUTURE TENSE OF "THERE IS / ARE".

Present	Simple Past	Future tense
THERE IS THERE ARE	THERE WAS THERE WERE	THERE WILL BE

EXERCISES.

1) Finish these sentences using the future tense of those modal verbs.

a) I couldn't speak English two years ago but next time I go to England I will be able to speak it.

b) I must do all these exercises but I don't think I can finish them today. Tomorrow I will have to finish all the others.

c) Last year we only had to pay 48,000 pts for our matriculation fee, but next year we will have to

gets his degree: acabar la carrera
VISA : visado
VISA CARD : targeta

a lot more. The fees increase every year.

d) I didn't need to spend so much money on books last year. This year I will need to spend a lot more because the books I will need are more expensive. (have to)

e) When he gets his degree in Engineering, he will be able to get a good job but he will have to work hard before that.

f) Last year when I went to the U.S.A. I will had to / needed to get a Visa, now you don't.

g) If I want to study Computer Science, in a few years' time I will need to / will have to buy a better computer.

dins d'uns anys

2) Make some predictions about the future. Write at least 8 sentences. You can also use "There will be / there won't be".

2.IV **THE FUTURE FORM "TO BE GOING TO".**

It is used to talk about **plans** and **resolutions** with no fixed date.

e.g. I'm going to study harder.

You only change "am, is, are". "GOING TO" remains the same for all persons:

I am		
You are		
He is	GOING TO	......work
We are		see
You are		.
They are		.

Negative statement: I am not GOING TO
He isn't GOING TO
You aren't GOING TO

Questions: He is going to | work.
Is he going to | work ? Yes, he is.
No, he isn't.

EXERCISES.

1) Put these words in the right order:

a) you / What / are / do ? / going to
What are you going to do?

b) have / this / not / going to / I'm / a holiday /year
I'm not going to have a holiday this year.

c) never / speak / I'm / you / again / going to / to
I'm going to speak to you never again

d) clean / going to / Who / the / is / car ?
Who is going to clean the car?

e) you / What / are / film / see ? / going to
What film are you going to see?

f) going to / parents / to / my / are / move / London
traslladar-se
My parents are going to move to London

g) are / prices / not / go up / going to
pujar
Prices aren't going to go up.

h) live ? / you / where / going to / are
Where are you going to live?

facts : fets
figures : números
real meaning : significat real
oil shortage : retall
clear warning : avís clar
go on : seguir
last : duraran
supply : abastecimiento
go up : pujar

2) Read the text and choose the right alternative.

THE ENERGY CRISIS

Some facts and figures began to have real meaning for many people during the oil shortage in 1973-74. That oil shortage was specially caused by some of the Arabian Gulf countries, but it was a clear warning of the crisis that will come.

This is our rate of using oil since 1945:

1945	1000 million	barrels
1955	2000 ..	..
1965	4100 ..	..
1975	8000 ..	..

If we go on like this, our present reserves will only last about 16 years. But Gerald Leach, at Sussex University, thinks (1) there will be an important crisis very soon.

"How much oil (2) will the world's cars, lorries and buses need in 1995?" he asked. "A lot more than the oil the companies say they (3) will be able to produce. So there will be more need than supply. But of course that cannot happen: it's impossible to have so many motor vehicles; they can't use more oil than there is".

"So what (4) will the result be?"

(5) "The oil companies will try even harder to get oil out of the earth. They are already working in difficult places —places like Alaska and the North Sea. But they (6) will have to try to get oil from (7) coal too. But all these methods are very expensive ways of producing oil; so oil prices will have to go up even more. Driving (8) is going to become very expensive."

"What (9) will people do? We don't know, but I don't think they'll stop driving. For most people it's very important to have one's own transport. I think they'll pay any amount of money for that."

quel|sevol

1.- a) there will is c) will there be
[✓ b)] there will be d) will be there

2.- [✓ a)] will the world's cars, lorries and buses need
b) will need the world's cars, lorries and buses
c) the world's cars, lorries and buses will need
d) the world's cars, will lorries and buses need

3.- a) will can c) will have to
b) will be able [✓ d)] will be able to

4.- a) will be the result
[✓ b)] will the result be
c) the result will be
d) is going to be

SPT

I studied in Vilanova for 3 years.
I didn't study ..
Did you study ..

You	studied	in Vilanova	for 3 years
S	V	CCL	CCT

Where did you study for 3 years? In Vilanova
How long did you study in Vilanova? For 3 years.

Amb WHO\ WHAT\ WHICH\ HOW MUCH-MANY no s'utilitza
el did a l'hora de preguntar, per example:

He	wrote	a letter	to a friend
S	V	O.D.	O.I

What did he write to a friend? A letter
Who did he write a letter to? A friend
Who wrote a letter to a friend? Him

He went to Barcelona by train.
Where did he go by train? To Barcelona.

TO BE ⇒ I, He\She\It } was
You, We, You, They } were

There is → there was
There are → there were
was → was not ⇔ wasn't
were → were not ⇔ weren't

SPELLING RULES (-ED) (REGLES) REGULAR VERBS

a) 1 SYLLABLE
Quan acaban en una sola vocal o consonant es doblen
J.e: stopped, slammed, rubbed, looked, talked
look i talk acaban amb dues vocals o consonants
la "x" no es doble mai.

b) 2 SYLLABLES
L'accent a l'última sil·laba
1 sola vocal al final
1 sola consonant al final
} J.e: admitted, preferred, éntered

c) -L
SEMPRE; J.e: travelled (en america no traveled), signalled.

5.- a) What will the oil companies try even harder?
b) What will they try even harder?
c) What companies will they try even harder?
[✓ d)] What companies will try even harder?

6.- a) are going c) is going to
b) will be able to [✓ d)] will have to

7.- a) Where will they try to get oil from?
b) From where will they try to get oil? preposició mal posada
[✓ c)] What will they try to get oil from?
d) How will they try to get oil?

8.- [✓ a)] is going c) will be able
b) will be d) there will be

9.- a) do will people?
b) people will do?
c) will do people?
[✓ d)] will people do?

8.11.94

2.V **SIMPLE PAST TENSE: REGULAR & IRREGULAR FORMS (review).**

2.V.1 REGULAR PAST FORMS.

.We add -ed to the infinitive in regular verbs.
e.g. "to work"___________worked (SP)

.It is the same form (-ed) **for all persons.**

Neg. Subject + DIDN'T + Inf (without "to")

e.g. "I did not work"

Quest. DID + SUBJECT + Inf (without "to") ?

e.g. "Did you work? Yes, I did. / No, I didn't.

.So you use the -ed form in positive statements only and in questions of this kind (with WHO, WHAT, WHICH, HOW MUCH / HOW MANY as subject):

e.g. "Who worked here yesterday?"
"What company decided to close down?"
Subject

mix : mesclar
develop : dessenvolupar
admit : admetre
lab : laboratori
slam : donar un cop
rub : fregar
lie : mentir

agree : consentir

d) consonant + y
y ⇒ ied ; f.e: carry → carried
try → tried
play → played

e) e
només s'afegeix d ; f.e: loved, lied, agreed

PRONUNCIATIÓN OF -EN

1. pronuncia |ɪd| quan acaba en |t| ó |d|
f.e: needed /'ni:dɪd/
handed /'həendɪd|
wanted |wənt,ɪd|
delighted /dʒ'laʒtɪd| (estat badant)
els altres es pronuncien com |t| o |d|

2. |t| after unvoiced consonants (sordes)
verbs qe acaben en : |p, k, f, s, ʃ, tʃ|
helped \helpt|
worked |wəi(r)kt\
laughed \la:ft/
kissed |kist|
washed |wɒʃt/
watch /wɒtʃt|

3. |d| Totes les altres consonants sonores o sordes
consonants sonores : /b, g, v, z, ʒ, dʒ, ð, l, n, ŋ, m, r|
rubbed |rʌbd|
louged |lɒgd| desitjar
Lived /lɪvd/
increased |ɪŋ'kri:zd| augmentar
garaged |gə'ra:ʒd|
changed |'tseɪndʒd|
berther |bə:θd| amarrar
filled |fɪld| omplir

2.V.2 IRREGULAR FORMS.

.We have to learn how they form the positive statement, but the interrogative and the negative form are the same as that of regular verbs.

e.g. "to speak"______________ spoke (SP)

(-) He didn't speak.
(?) Did he speak? Yes, he did./ No, he didn't.

Note: There is a list of irregular verbs available in this workbook.

Some special cases:

.The Simple Past tense of "TO BE" is **WAS / WERE.**

.The Simple Past tense of "THERE IS" is **THERE WAS** and of "THERE ARE" is **THERE WERE.**

vary : variar \ obey : obeir \ add : afegir, sumar \ supply : sumministrar
heat : escalfar \ slip : rellscair \ condense : condensar \ prefer : preferir

EXERCISES.

1) Change these regular verbs into the Simple Past tense:

-open opened
-vary varied
-obey obeied
-answer answered
-carry carried
-slip slipped
-add added
-heat heated
-ask asked
-start started

close closed
condense condensed
supply supplied
listen listened
prefer preferred
stop stopped
mix mixed
stay staied
die died
separate separacted

travel travelled
practise practised
transfer transferred
develop developped
admit admitted
combine combined
cause caused
transform transformed
design designed
happen happened

2) Make these sentences negative, then make questions and answer them using the short form:

1.- Iron became an important engineering material at a very early stage.
Iron didn't become an important engineering material at a very early stage
Did iron become an important . . . ? Yes, it did

maquina de vapor
2.- In 1712 Newcomen invented a new steam engine and the fuel he used was coal.
In 1712 Newcomen didn't invent a new . . . he used wasn't coal
In 1712 did Newcomen invent . . . ? No, he didn't

3.- There were two accidents in the lab yesterday.
There weren't two accidents in the lab yesterday
Where were two accidents in the lab yesterday ? Yes, there were

4.- My PC stopped working yesterday morning.
My PC didn't stop working yesterday morning
Did my PC stop working . . ? No, it didn't

explained /ɪks'pleind/
bathed /beiðd/ banyar-se
comb /kəumd/ pentinar-se
preferred /prɪ'fɜ:(r)d/
⇄

Per verbs que acaben en vocal :
stayed /steid/
renew /rɪ'njʊd/ renovar

MODAL VERBS

PRESENT	PAST
CAN	COULD → funciona com WAS, WERE
MUST	
HAVE TO	HAD TO → necessita DID

COULD : COULD NOT \ COULDN'T
i.e: SHe couldn't speak English 2 years ago.
Couldn't he speak English 2 years ago? Yes she could.

HAD TO : I had to do some practicals
I didn't have to do some practicals
Did you have to do some practicals? Yes, I did

5.- He was studying Mechanical Engineering two years ago.

He wasn't studying Mechanical Engineering two years ago.

Was he studying . . . ? Yes, he was

6.- In 1988 their local industry began to suffer from recession.

In 1988 their local industry didn't begin to . . .

In 1988 did their local industry . . . ? No, it didn't

7.- They studied in Vilanova for three years.

They didn't study in Vilanova . . .

Did they study in Vilanova ? Yes, they did

2.V.3 SIMPLE PAST OF MODAL VERBS: COULD, HAD TO.

Present	Past	
CAN	COULD	(Could not)
MUST HAVE TO	HAD TO	(Did / Did not)

2.V.4 WHO, WHICH, WHAT, HOW MUCH / HOW MANY AS SUBJECT IN QUESTIONS.

.Remember that **Who**, **Which**, **What**, **How much** and **How many** can be the subject of a sentence in a given question. When that occurs the verbs does not take the auxiliary DID and remains in the simple past form (-ed).

e.g. Watt designed his first engine in 1765.
Subj.

Who designed his first engine in 1765? Watt did.
Subj.

e.g. My new PC broke down yeterday.
Subj.

What / Which PC | broke down yesterday? My new PC did. Mine did.
Subj.

EXERCISES.

claudàtors
↓

1) Put all the verbs in brackets in the past tense:

THE HISTORY OF COMPUTERS

a) One of the first devices man [use] used to process data was the *abacus*. The abacus (the plural of which is *abaci*) is a device used to perform calculations with moving counters made of beads or stones. It is also known as counting board. This tool, which [be] was used in ancient times, is still used today to make arithmetical computations.

Centuries after the invention of the abacus, during the period called the Scientific Revolution, which [begin] began around 1540 and [culminate] culminated in 1687, scientists [invent] invented other computational devices. The Scientific Revolution [be] was an important period. To start with, in 1642, Blaise Pascal, a French mathematician, [invent] invented the first mechanical calculator. Then, in 1673, Gottfried von Leibnitz, a German mathematician, [create] created another calculating machine. Pascal and Leibnitz both [understand] understood that machines [can] could help people to save time and money. In fact, both men [try] tried to sell their inventions to businesses.

The Scientific Revolution [prepare] prepared the way for he great technological advances of the Industrial Revolution that [start] started. in England later on.

b) Charles Babbage (1792-1871) [show] showed that it was possible to make a machine perform arithmetical calculations according to a predetermined series of instructions. But this discovery [be] was of little value until thermionic valves and, later, bistable electronic circuits had been invented. At the same time, with the growth of industry and commerce in the nineteenth century, it [become] became necessary to find a way of storing vast quantities of data in a form in which they [can] could be easily retrieved and prcessed. Herman Hollerith (1860-1929) [use] used data stored in the form of holes punched in cards, an invention of the French weaver Joseph Marie Jacquard (1752-1834).

Theorists [evolve] evolved the idea of the stored program; in the 1940's these three lines of research [come] came together and the earliest true computers, such as ENIAC and EDSAC, [be] was built. Since then things have developed so fast that we now talk about "third-" and "fourth-generation" computers. Technology has caught up with theory and every year there are new discoveries and inventions; integrated circuits, thin film, tunnel diodes and super-cooled memory banks are some of the latest.

What was the form the people used? Some form of abacus.
When did people try to find easy ways of calculating? During
Who produced logarithm tables? Henry Briggs

What was the basis for building today's computers? His ideas
What could this machine produce? long lists of mathematical ...
What was developed in 1960? The second generation ..
Why could they perform work ten times faster? They used ..
When did third generation computers appear on the market? In 1965
What are they like? Smaller
Who is developing very fast and small computers? Engineers
What should engineers do? Develop other ...

form : mètode

2) Read the text and choose the right options. Then, make questions for the bits underlined.

11.11.94

HISTORY OF COMPUTERS

The first calculating device was (1) **the abacus**. People used some form of abacus until the 16th century and some people use it today because they (2) .... know how to read to use it (3).

During the 17th and 18th centuries many people tried to find easy ways of calculating. Henry Briggs produced logarithm tables, Sir Isaac Newton and Leibnitz invented Calculus, another branch of mathematics.

(4) **The first real calculating machine** appeared in 1820 as a result of some people´s experiments. This type of machine saves a great deal of time and reduces the possibility of making mistakes. In 1830, Charles Babbage designed "the Analytical Engine" and his ideas were the basis for building today´s computers.

In 1930, Vannevar Bush built the first analog computer and later Professor Howard Aiken and some people from IBM completed the first digital computer. This machine could produce long lists of mathematical problems (5) ....

The first generation of computers used vacuum tubes and they (6) .... until 1950. They could perform thousands of calculations per second. In 1960 the second generation of computers was developed and they could perform work ten times faster than (7) .... predecessors because (8) they used transistors instead of vacuum tubes. Third-generation computers appeared on the market in 1965. (9) They have **integrated circuits** and they are smaller. Now, fourth-generation computers are on the market. Engineers are developing very fast and small computers.

Nowadays computer technology (10) .... at a fast rate and a computer can be obsolete in few years. Some people say that engineers should develop other technologies too.

1. a. What was the abacus?
   [✓ b.] What was the first calculating device?
   c. What did the first calculating device be?
   d. What the first calculating device was?

2. a. do not need to
   b. cannot
   c. mustn´t
   [✓ d.] have to

3. a. Why does some people use it today?
   b. Why use it some people today?
   c. Why do some people use it today?
   [✓ d.] Why some people use it today?

appear: apareixer

4. [✓ a.] What appeared in 1820?
b. What did appear in 1820?
c. What did it appear in 1820?
d. How did it appear in 1820?

5. a. very slowly c. quick and quick
[✓ b.] very fast d. very fastly

6. a. appeared [✓ c.] did not appear
b. did appear d. appeared not

7. a. its b. theirs [✓ c.] their d. his

8. a. Why could they perform work ten times faster?
b. Why could perform they work ten times faster?
c. Why did they can perform work ten times faster?
d. What could perform work ten times faster?

9. a. What has integrated circuits?
b. What integrated circuits have they got?
c. What do they have?
d. What have them?

10. a. grows b. is growing c. grow d. does grow

11. According to the text:
a. People have to know how to read to use the abacus.
b. Nobody was interested in finding easy ways of calculating.
c. Vacuum tubes are faster than integrated circuits.
d. Scientists and engineers are very interested in the development of computers.

ie
namely } és a dir (per especificar un exemple, etc)
that is
circuitry : circuitatge
etched : gravats
gave rise to : donar lloc
will be like : com serà
knowledge : coneixement
task : feina

A) Read the text below

First read the text without stopping, and try to get a *general idea* of the content. Then read it again more slowly, with a dictionary if necessary.

THE FIFTH GENERATION

From first to the fourth Generation

Computer hardware is now in its fourth generation. The first generation was based on valve technology, the second on transistors, and the third on simple integrated circuitry. This third stage was the biggest step forward; electronic circuits comprising many components were etched onto a silicon chip, and this made it possible to produce relatively cheap and powerful micro computers. At the start of the eighties, very large scale integration (VLSI) appeared: one silicon chip contained up to 100,000 different components. VLSI gave rise to the fourth generation of computers. In 1981 the Japanese said that by 1991 they would have the next generation of computers ready — the Fifth Generation.

The Fifth Generation

Nobody is sure what the Fifth Generation computers will be like, but the most important element is artificial intelligence (AI). The two necessary elements for AI are first, that the computer can communicate in natural language (ie in English or Spanish, not in special computer languages like Pascal or C), and second that it has an encyclopedic knowledge of the world from which it can make reasonable inferences and deductions. If we limit ourselves here to considerations of natural language and world knowledge (without looking at the problems of visual perception for example), we can at once appreciate how enormous the task is.

Artificial Intelligence

The problems of AI concern both perception and interpretation. How can we get a computer to perceive the meaning of a particular spoken sentence? Words carry different meanings according to their context and stress. How can we teach a computer to perceive different moods (Is the speaker being sarcastic, or serious, or is he joking or angry, or sad?) according to volume, stress, etc.? And how can a computer interpret conversations like this:

(John and Mary are a married couple. They are at home. John is busy in the kitchen and Mary is in the bathroom, having a bath.)

The phone rings.

John (shouting): The phone's ringing!

Mary (shouting): I'm in the bath!

We quickly understand the «message» of John's sentence: he wants his wife to answer the telephone. Mary understands him, and her «message» is that she can't answer the phone because she is having a bath. But our interpretation of this simple dialogue involves an incredible amount of «world knowledge» and experience which is difficult to «explain» to a computer.

Expert System

The partial solution to these problems has been expert systems, which restrict the type of language used and, more important the field or area that the computer «knows» about. There are, for example, medical diagnostic expert systems which can work quite intelligently in the area of medicine, but only medicine. The expert systems software comprises an inference program, a knowledge base, and a user interface. The user interface ideally would be a voice recognition device so that the user could just talk naturally to the computer, but so far, the normal method is to type in sentences of simplified syntax. So, for example, a doctor in a hospital can type in the symptoms of a skin disease suffered by a particular patient, and the computer can ask for clarification or more information and finally give its diagnosis.

whose car is this? De qui es aquest cotxe?
of such a : tal
man-made : fet per l'home
poverty : pobressa
want : necessitat

in : exactament
by : cap a

because of : a causa de
diferencia entre
because of → no du verb
because → va seguit d'una frase sencera

8: Because of perception and interpretation
Because it's difficult for a computer to understand the meaning of a spoken sentence.

And then

In the future — perhaps we will have to wait until the next century — we will have more genuine AI machines than now. Computers that «understand» and «think». The consequences of such a development have to be carefully considered: will we live in a free society (free of the need to work and free from poverty and want) or a society controlled by man-made machines?

Questions about the text:

1) What is the present state of computer hardware according to the text?

It's in ~~its~~ the fourth generation, and they are working on the next one

2) What was the first generation based on?

(~~It~~ was based) on valve technology

3) What about the second and third?

The second (was based) on transistors and the third on integrated circuitry

4) What appeared at the beginning of the eighties?

VLSI (appeared)

5) When did the Japanese say that the fifth generation would be ready?

By 1991

6) What will be the most important element of the fifth generation computers?

AI

7) What will be the new system of communication with computers?

Natural language

8) Why is it difficult to make a computer understand natural language?

Because of the wide range of meanings (that) a word has

9) What is an expert system?

It's a system than restricts the type language used and the area the computer ~~it~~ knows about.

10) What two possibilities does the text mention for the future?

To live in a free society or in a society controlled by man-made machines.

Irregular verbs

Infinitive	*Simple Past*	*Past Participle*
be /bi:/	was /wəz, wɒz/ were /wə, wɜ:(r)/	been /bɪn, bi:n/
become /bɪ'kʌm/	became /bɪ'keɪm/	become /bɪ'kʌm/
begin /bɪ'gɪn/	began /bɪ'gæn/	begun /bɪ'gʌn/
break /breɪk/	broke /brəʊk/	broken /'brəʊkn/
bring /brɪŋ/	brought /brɔ:t/	brought /brɔ:t/
build /bɪld/	built /bɪlt/	built /bɪlt/
buy /baɪ/	bought /bɔ:t/	bought /bɔ:t/
catch /kætʃ/	caught /kɔ:t/	caught /kɔ:t/
come /kʌm/	came /keɪm/	come /kʌm/
cost /kɒst/	cost /kɒst/	cost /kɒst/
do /dʊ, də, du:/	did /dɪd/	done /dʌn/
draw /drɔ:/	drew /dru:/	drawn /drɔ:n/
dream /dri:m/	dreamt /dremt/	dreamt /dremt/
drink /drɪŋk/	drank /dræŋk/	drunk /drʌŋk/
drive /draɪv/	drove /drəʊv/	driven /'drɪvn/
eat /i:t/	ate /et/	eaten /'i:tn/
fall /fɔ:l/	fell /fel/	fallen /'fɔ:lən/
feel /fi:l/	felt /felt/	felt /felt/
find /faɪnd/	found /faʊnd/	found /faʊnd/
fly /flaɪ/	flew /flu:/	flown /fləʊn/
forget /fə'get/	forgot /fə'gɒt/	forgotten /fə'gɒtn/
get /get/	got /gɒt/	got /gɒt/
give /gɪv/	gave /geɪv/	given /'gɪvn/
go /gəʊ/	went /went/	gone /gɒn/ been /bɪn, bi:n/
have /həv, hæv/	had /(h)əd, hæd/	had /hæd/
hear /hɪə(r)/	heard /hɜ:d/	heard /hɜ:d/
hurt /hɜ:t/	hurt /hɜ:t/	hurt /hɜ:t/
know /nəʊ/	knew /nju:/	known /nəʊn/
learn /lɜ:n/	learnt /lɜ:nt/	learnt /lɜ:nt/
leave /li:v/	left /left/	left /left/
lend /lend/	lent /lent/	lent /lent/
let /let/	let /let/	let /let/
lie /laɪ/	lay /leɪ/	lain /leɪn/
lose /lu:z/	lost /lɒst/	lost /lɒst/
make /meɪk/	made /meɪd/	made /meɪd/
mean /mi:n/	meant /ment/	meant /ment/
meet /mi:t/	met /met/	met /met/
pay /peɪ/	paid /peɪd/	paid /peɪd/
put /pʊt/	put /pʊt/	put /pʊt/
read /ri:d/	read /red/	read /red/
ride /raɪd/	rode /rəʊd/	ridden /'rɪdn/
ring /rɪŋ/	rang /ræŋ/	rung /rʌŋ/
rise /raɪz/	rose /rəʊz/	risen /'rɪzn/
run /rʌn/	ran /ræn/	run /rʌn/
say /seɪ/	said /sed/	said /sed/
see /si:/	saw /sɔ:/	seen /si:n/
sell /sel/	sold /səʊld/	sold /səʊld/
send /send/	sent /sent/	sent /sent/
shake /ʃeɪk/	shook /ʃʊk/	shaken /'ʃeɪkn/
show /ʃəʊ/	showed /ʃəʊd/	shown /ʃəʊn/
shut /ʃʌt/	shut /ʃʌt/	shut /ʃʌt/
sing /sɪŋ/	sang /sæŋ/	sung /sʌŋ/
sit /sɪt/	sat /sæt/	sat /sæt/
sleep /sli:p/	slept /slept/	slept /slept/
speak /spi:k/	spoke /spəʊk/	spoken /'spəʊkn/
spell /spel/	spelt /spelt/	spelt /spelt/
spend /spend/	spent /spent/	spent /spent/
stand /stænd/	stood /stʊd/	stood /stʊd/
swim /swɪm/	swam /swæm/	swum /swʌm/
take /teɪk/	took /tʊk/	taken /'teɪkn/
teach /ti:tʃ/	taught /tɔ:t/	taught /tɔ:t/
tell /tel/	told /təʊld/	told /təʊld/
think /θɪŋk/	thought /θɔ:t/	thought /θɔ:t/
throw /θrəʊ/	threw /θru:/	thrown /θrəʊn/
understand /ʌndə'stænd/	understood /ʌndə'stʊd/	understood /ʌndə'stʊd/
wake up /'weɪk 'ʌp/	woke up /'wəʊk 'ʌp/	woken up /'wəʊkn 'ʌp/
wear /weə(r)/	wore /wɔ:(r)/	worn /wɔ:n/
win /wɪn/	won /wʌn/	won /wʌn/
write /raɪt/	wrote /rəʊt/	written /'rɪtn/

quan tenim dues formes del past tense, la regular i la irregular, la primera correspon a l'anglès americà i la segona a l'anglès britànic

58,942 : fify eight thousand, nine hundred and forty two

645,932,461 : six hundred and forty five milion,
nine hundred and thirtytwo thousand,
four hundred and sixtyone

2,000,013 : two milion, and thirteen

312,021,603 : three hundred and twelve milion and
twentyone thousand, six hundred and
three

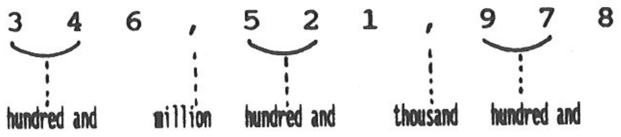
UNIT 2

2. MEASUREMENTS AND DIMENSIONS IN PHYSICAL DESCRIPTION.

This unit deals with those structures and expressions that are most commonly found in spatial measurement in physical descriptions. A brief review of the verbalization of some numerical expressions, that is, percentages and decimals, and a revision of some determiners indicating sufficiency and excess to express quantity, are also included in this introductory unit.

2.1. EXPRESSING MATHEMATICAL OPERATIONS: Numbers.

Cardinals:



1,234 mil
1.243 u coma

3 milion~~s~~
2 milion~~s~~

one
⇕

ex: 100,002 a hundred thousand and two.

100,020 a hundred thousand and twenty.

100,120 a hundred thousand, one hundred and twenty.

EXERCISES:

1.- Now say these numbers:

942 nine hundred and fourty two
209 two hundred and nine
412 four hundred and twelve
1,100 one thousand, one hundred
1,500 one thousand, five hundred
1,900 one thousand, nine hundred.

58,942
645,932,461
2,000,013
461,902,740
729,414,886
312,021,603

Ordinals:

1st	first	4th	fourth	7th	seventh
2nd	second	5th	fifth	8th	eighth
3rd	third	6th	sixth	9th	ninth
				10th	tenth

11th	*eleventh*	*17th*	*seventeenth*	*23rd*	*twenty-third*
12th	*twelfth*	*18th*	*eighteenth*	*24th*	*twenty-fourth*
13th	*thirteenth*	*19th*	*nineteenth*	*30th*	*thirtieth*
14th	*fourteenth*	*20th*	*twentieth*	*31st*	*thirty-first*
15th	*fifteenth*	*21st*	*twenty-first*	*40th*	*fortieth*
16th	*sixteenth*	*22nd*	*twenty-second*	⋮	

hundredth
thousandth

Fractions:

1/2	a half / one half
1/3	a third / one third
1/4	a quarter / one quarter

1/5	*a fifth*	*2/3*	*two-thirds*
1/6	*a sixth*	*3/4*	*three-quarters*
1/8	*an eighth*	*4/5*	*four-fifths*
1/10	*a tenth*	*5/6*	*five-sixths*
1/16	*a sixteenth*	⋮	
1/100	*a hundredth*		

2 1/2	*two-and-a-half*
3 3/4	*three-and-three-quarters*
6 7/8	*six-and-seven-eighths*

EXERCISES:

2.- Now say these fractions and cardinals:

36th therty sixth
8/4 eight - quarters
92nd ninety second
9 6/10 nine - and six-tenth
41st forty first
12 1/2 twelve - a half
1/9 a ninth
66th sixty sixth

25th twenty fifth
3/4 three - quarters
50th fiftyth
5 3/5 five - three - fifth
23rd twenty third
8 2/100 eight - two - hundredth
3/8 three - eighth
15th fifteenth

3-0 : three-nil
0 K : zero kelvin

Decimal Fractions and Percentages:

In decimal fractions an '0' has two names. If it comes before the decimal point, it is called a ***nought***; after the point it is pronounced ***'oh'***.

0.1	*nought-point-one*
0.01	*nought-point-oh-one*
0.001	*nought-point-oh-oh-one*

After the point, we say each number by itself:

1.1	*one-point-one*
12.012	*twelve-point-oh-one-two*

4 % is four ***per cent***.

EXERCISES:

3.- Now say these decimals and percentages:

98 % ninety eigh per cent
15.023 fifteen-point-oh-two-three
72.1 % seventytwo-point-one per cent
48.991 % forty eigh-point-nine-nine-one
33 1/3 % thirty three and a third per cent

12.001 twelve-point-oh-oh-one
0.05 % nought-point-oh-five per cent
6 1/2 % six and a half per cent
34.56 % thenty four-point-five-sixe per cent
24 5/8 % twenty four and five and a eighth.

18.11.94

2.2. WAYS TO EXPRESS SPATIAL MEASUREMENTS.

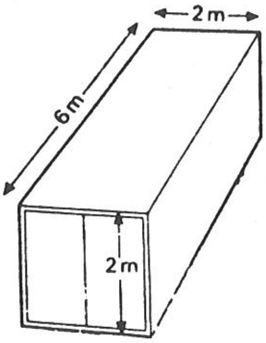
Dimensions:

Length	*Width*	*Height*	(NOUNS)
Long	*Wide*	*High*	(ADJECTIVES)
llargada	amplada	alçada	

· How long / wide / high is this container?

adjectives _ no nouns

It has three dimensions:
length, width, height
It is 6 m in length, 2 m in width and 2 m in height.
So it measures 6 × 2 × 2 m (6 m by 2 m by 2 m).
It is three-dimensional.



- X has a length / width / height of __________ cm.
- The length / width / height of X is __________ cm.
- The length / width / heigth of X is measured in cm.
- X is __________ cm in length / width / height.

1. A diskette is 93 mm long
90 mm wide
3 mm high

2. A personal computer is approx. X long
Y wide
Z high

3. A distionary is approximately 23 cm long
The width of dictionary is approx. 15,5 cm
A distionary is approximately 3 cm high

4. A loudspeakes is 14 cm long
14 cm wide
20 cm high

5. A calulator is about 12 cm long
7 cm wide
7 mm high

How long / wide / high is it?

It is 6 m. long
It is 6 m. in length
It has a length of 6 m.
The length of it is 6 m.

Some qualifying words and phrases for non-exact dimensions are:

It is **exactly** 6 m. long
It is **about** 6 m. long
It is **approximately** 6 m. long } aprox.

EXERCISE Jer-ho

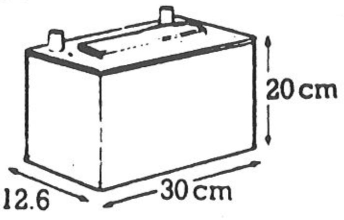
Describe the approximate dimensions of:

1. a diskette
2. a personal computer
3. a dictionary
4. a loudspeaker (altaveu)
5. a calculator

6. The battery is 30 cm long
12,6 cm wide
20 cm high

7. The bridge is 60 m long
7 m wide
10 m high

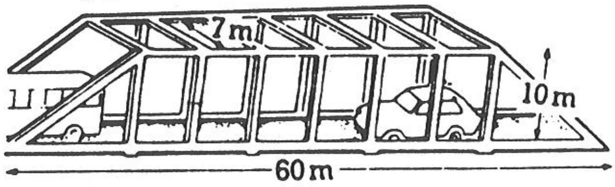
6.



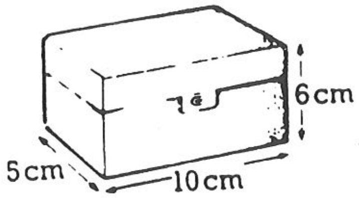
a battery

7.

a bridge



8.

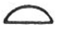
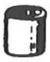
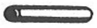
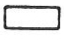
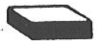
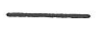
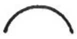
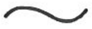
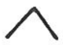


a box

8. The box is 10 cm long
5 cm wide
6 cm high

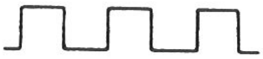
2.3. WAYS TO EXPRESS DIMENSION IN PHYSICAL DESCRIPTION: Shapes.

Description of shapes

shape	**noun**	**adjective**	**shape**	**noun**	**adjective**
2 dimensional			3 dimensional		
	circle	circular		sphere	spherical
	semi-circle	semi-circular		cylinder	cylindrical
	square	square		tube	tubular
	rectangle	rectangular		—	rectangular
lines			edges \ canto		
		straight			rounded
		curved			pointed

When something has a regular geometric shape we can use one of the adjectives from the table to describe it.

Example:



a square wave ona

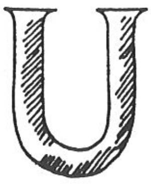
nouns · X is *shaped like* a triangle / circle / square / rectangle / semi-circle

adj. · X *is* | triangular | *in shape*.
circular
square
rectangular
semi-circular

semblar-se ↑ conegut

When the object has no recognized geometric shape but does resemble a well-known object or a letter of the alphabet, it may be described in one of the following ways:

· X is U-*shaped* (It is shaped like the letter 'U')



disk tracks : pistes d'un disc

floppy disk : disquet

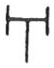
A is   amb is ⇒ frase complete
       sense is ⇒ complement d'una frase

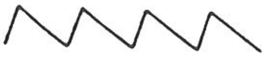
VDU : visual display unit (monitor)

Generalment quan fem un compost : ___ - ___
la primera no es posa en plural

A cloud shaped like a dragon
dragon shaped cloud.
The cloud is shaped like a dragon

Example:





an H-shaped antenna **a saw-tooth wave**

serra dentada

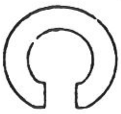
Exercise:

Now describe the shape of the following objects as completely as possible:

1. **disk tracks** are circular in shape
2. **a floppy disk** is shapped like a square
3. **a chip** {is shaped like a centipede
   {a cent-shaped chip
4. **a VDU** is shapped like a square

5.

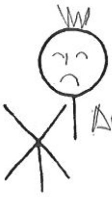
An C-shaped magnet



It's shaped like headphones
It's head phone-shaped

a magnet
iman

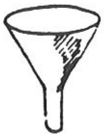
6.



The aerial is circular in shape
An x-shaped aerial

aerials
antenes

7.



cone \ conicall
noun \ adj.

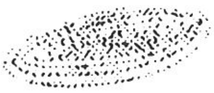
a funnel is shapped like a cone
is conicall in shape

8.

dubular

a test tube is dubular in shape

9.



oval
ellipse \ elliptic

a blood cell is oval in shape
is shapped like a ellipse
is elliptic in shape

10.

a snowflake is shapped like a star
A star-shaped snowflake

elbow : colze
inch: pulzada
thumb : dit gros, polze
rods : barra rodona
accuracy : precisió
nowadays : actualment
to check : comprobar
wavelength: longitud d'ona d'un cert tipus de llum
standardise : normalitzar
to look for : cercar

- Because they were based on a unit which wasn't constant, the human body

- The measurements become more constant when the scientists, during the French Revolution, chose the distance from the Equator to the North Pole like a unit.

By looking
By using } for standard measurement which didn't vary, the metre.

6.- Read the text and find the answers to these questions:

a) Why did early measurements vary?
b) How have measurements become more constant?

STANDARDS OF MEASUREMENT.

In early times measurements were made by comparing things with parts of the human body. Early units of measurement included the distance from the elbow to the fingers, the width of the hand and the width of the fingers.

Some of these human measurements are still used. For example, the inch is based on the length of half the thumb. A foot was originally the length of a man's foot. A mile was one thousand walking steps.

These units were only approximate, because their standard --the human body-- was not constant. Governments tried to standardise them by using rods of fixed lengths. But these rods still varied from country to country.

During the French Revolution, scientists looked for a standard of measurement which did not change. They chose the distance from the Equator to the North Pole, which is one quarter of the circumference of the Earth. One ten-millionth of this was called one metre and became the basic unit of the metric system. Other metric units are based on it. For example, the centimetre is one hundredth of a metre. A gram --the unit of weight-- is the mass of one cubic centimetre of water.

A standard metre was marked on a platinum bar. The accuracy of measuring instruments was checked by comparing them with this bar. Nowadays the metre is standardised by comparing it with another constant --the wavelength of a certain kind of light.

Now complete these notes:

a) Early units of measurement included the distance from the elbow to fingers, width of hand, width of finger.

b) Human measurements include the inch, the foot, the mile. (units of measurements)

c) These human \ early measurements were not constant because the human body varied so rods of fixed lengths were used to standardise them, but these also varied.

d) the metre was chosen as the basic unit of measurement the metric sistem. Its length is one ten-millionth of one quarter the Earth's circumference. Other metric units are centimetre, gram. *

e) The standard metre is marked on a platinum bar. Nowadays another constant is used: the wavelength of a certain kind of light.

* based on it

to flow : fluir
copper : coure
iron : ferro

Frase amb complements : 1a for
2a to

That printer is too heavy for me
" " " " " to carry
" " " " " for me to carry

There's | too much | wather in the test tube
| too little |

There are | too many | students in class
| too few |

We can speak English well enough to communiccate
There are enough classrooms in this school.
device : aparell
silicon : silici
silicone : silicona

25.11.94

2.4. WAYS TO EXPRESS QUANTITY: Quantitative Determiners.

·TOO: (massa)

*too		+ adj.	+ for (noun) / to (verb)
*too	much little	+ uncountable nouns	
*too	many few	+ countable nouns	

·ENOUGH: (insuficient)

*adjective	+ enough	+ for (noun) / to (verb)
*enough	+ noun	

Too resistant for electricity to flow

Too | much / little | copper

Too | many / few | test tubes

A) Which of the words below are countable, and which are uncountable? Put a *C* or *U* beside each word:

silicon	U	electricity	U
computer	C	mouse	C
program	C	disk	C
key	C	software	U
information	U	time	U
device	C	bit	C

conductor enough for electricity to flow

enough iron

bugs : error en un programa

debugging : treure tots els error en un programa

B) Too much or too many?

- **Look at these examples:**

There are *too many* cars in this town. verb plural (C)
There is *too much* noise in this town. " singular (U)

There aren't *enough* trees in this town.
There isn't *enough* fresh air in this town.

- Now complete the sentences:

1. There is too ..much.. electricity entering the system.
2. There are too .many.... bugs in this program.
3. There isn't ..enough... software for Chinese students.
4. There aren't enough computers in our school.
5. That's too .much..... money for a printer like that.

C) Can you make sentences about the following using **too much, too many, not enough**?

pollution / big cities
supermarkets / my neighborhood
taxis / Rome
money / my bank account

There is too much pollution in big cities
There are too many | few | supermarkets in my neighborhood

There are too many taxis in Rome
There is too little money in my bank account
There isn't enough money in my bank account
There aren't enough supermarkets . . .

TO : Moviment verbs , indica una direcció

AT : tal lloc , no moviment.

AWAY FROM : a tanta distancia de

(AWAY) FROM : a una distancia de

That city is off the map : fora d'una superficie.

INTO : entrar en un lloc , remarcar-ho

OUT OF : fora d'un volum

2.12.94

UNIT 3

3. SPACE ORDER IN PHYSICAL DESCRIPTION.

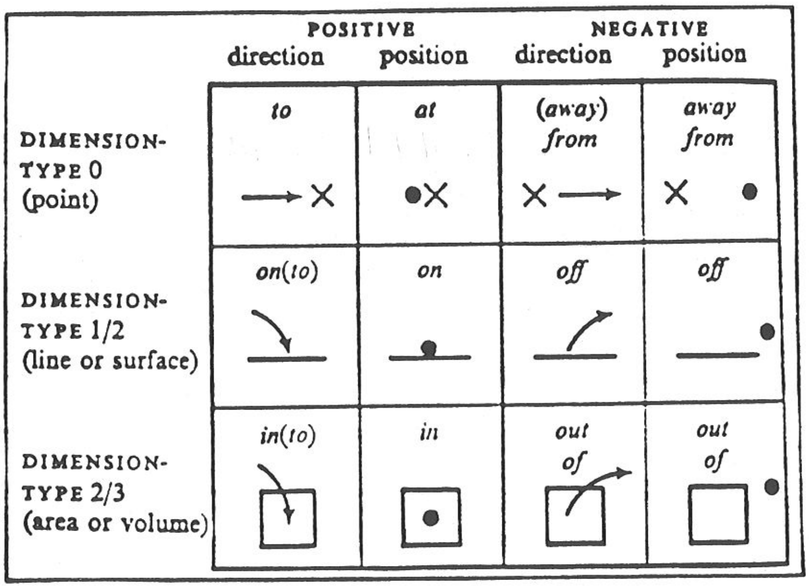
In this unit prepositions of position and movement are reviewed in relation to space order in physical description.

Space order can be divided into two categories:
-General space order: when only rough information is given.
-Specific space order: when measures and spatial relationships are more precise.

3.I. POSITION / MOVEMENT AND DIMENSION: Basic meanings.

When we use a preposition to indicate place or movement, we do so in relation with dimensional properties.

Here are some basic meanings of some prepositions in their different dimensions.



	POSITIVE		NEGATIVE	
	direction	position	direction	position
DIMENSION-TYPE 0 (point)	to → ×	at ●×	(away) from × →	away from × ●
DIMENSION-TYPE 1/2 (line or surface)	on(to)	on	off	off
DIMENSION-TYPE 2/3 (area or volume)	in(to)	in	out of	out of

punt a l'espai

línia o superfície { llocs petits

arees i volums { llocs molt més grans

The choice of preposition is often governed by the way we see an object, whether we see it

(A) as a point in space (×)
(B) as a line (———)
(C) as a surface
(D) as an area
(E) as a volume

Telephone exchange : central telefònica

signal : senyal.

lead : plom

the main cable : cable principal

a crack : esquerda

pipeline : xarxa de canonades

There is oil : hi ha petroli

wires : cables

spare fuse : fusible de sobres

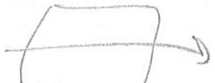
Lable : etiqueta

to crow : reunir-se

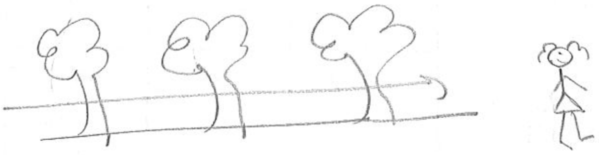
USA : He's in the street

GB : " on "

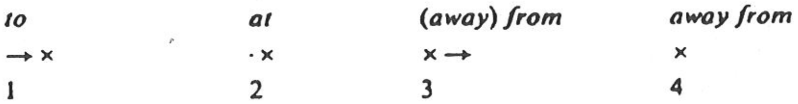
across the park



through the park

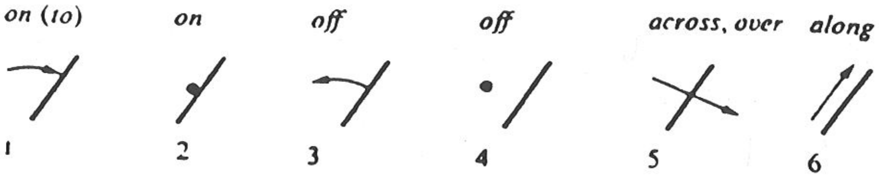


(A) The place is seen as a POINT



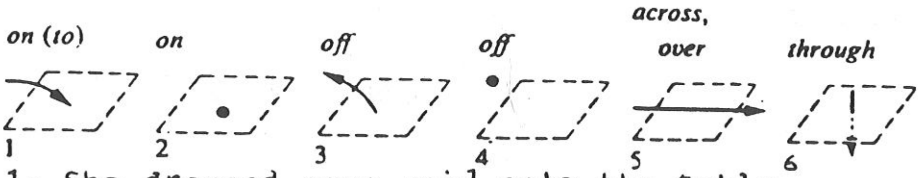
e.g. 1- The signal was sent **to** the telephone exchange
2- The switch is fixed **at** the wall
3- We came **(away) from** the laboratory
4- They stayed **away from** the fire

(B) The place is seen as a LINE



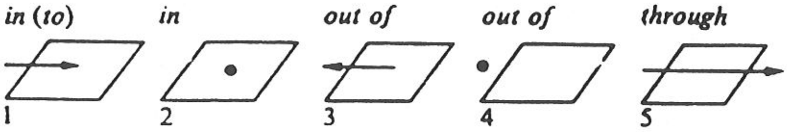
e.g. 1- Some lead fell **onto** the main cable
2- They found a crack **on** the pipeline
3- We turned **off** the main road
4- There is oil 10 miles **off** the coast
5- They drove **across** the frontier
6- Electricity runs **along** wires

(C) The place is seen as a SURFACE



e.g. 1- She dropped some acid **onto** the table
2- There is a spare fuse **on** the floor
3- He took the label **off** the screen
4- That's a place **off** the map
5- The signal went **across** the electric field ($\vec{E}$)
6- He looked **through** the window

(D) The place is seen as an AREA



e.g. 1- They crowded **into** the streets
2- He has a house **in** the city
3- I flew **out of** the country
4- We stayed **out of** the district
5- We went for a walk **through** the park
across

compressed air : aire comprimit

pump : bombejat

drawer : calaix

steam : vapor

is pour : sortir

punch cards : targes perforades antigues d'ordinador

loudspeaker : altaveu

to sort : classificar

storage : magatzem

flow : fluide

speed : velocitat

mainframes : ordinadors grans

to set up : establir

main storage : emmagatzament principal

to develop : desenvolupar

closed-loop path : bucle tancat

9 ⇒ entre el corrent des de fora ⇒ into
⇒ a través del circuit ⇒ through

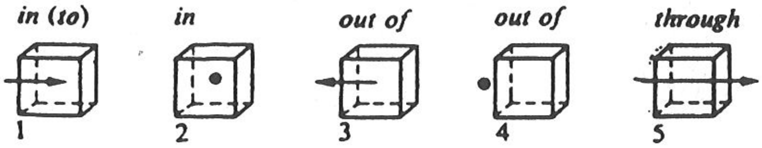
10. Els dispositius d'entrada permeten entrar dades en l'ordinador

to be boot : carregar

gravar en un disquet : to store on disk

stay away from : allunyat.

(E) The place is seen as VOLUME



e.g. 1- Compressed air was pumped **into** the cylinder
2- The new components are kept **in** the drawer
3- Steam was pouring **out of** the engine
4- The tools were **out of** the box
5- The signal went **through** the air

Prepositions illustrated by diagrams 1,3,5 and 6 involve MOTION. The prepositions in diagrams 2 and 4 indicate STATE.

EXERCISES

4) Fill in the blanks with one of the above studied prepositions:

to
from
into
out of
through
between
~~over~~
~~above~~
on

1. A microphone converts sound into electrical signals.

2. In a TV system, the sound comes from a loudspeaker.

3. With older computers, punch cards were put into the machine, which automatically sorted them.

4. Main storage and the CPU are connected to a console.

5. The control unit selects instructions and data from memory and controls the flow between main storage and the arithmetic logical unit.

6. Transfer speed refers to the number of words a tape can transfer from one tape to another.

7. In 1952, IBM decided to get into the business of making mainframes and set up a special team to develop the first PC.

8. Pictures or data are shown on the computer screen.

9. Electric current flows into\through a closed-loop path called circuit.

10. Input devices allow data to get into the computer.

11. An operating system is stored on disk and has to be booted into the internal memory.

12. If you don´t want viruses in your PC, stay away from pirated software.

1. at : general
in : specific
He was at the university
In his office

2. at : particular point
in : larger areas
He was waiting at the bus stop
She lives in London

3. the point of view of the speaker is different

My wife's at her office (husband at home)

Mrs Jones is in her office (secretary)

into : canvi, transformació
verbs : to convert
to turn
to change
to translate
onto : situació en lloc.

from : separar alguna cosa o altre

Pay special attention to the following contrasts:
—AT / ON / IN.

.AT.- We use it for dimensionless locations. It is more general than "IN" and it does not mean "inside", it means at a point.

.ON.- It is used for two-dimensional areas, that is, for a surface or a line, with direct contact between object and place. tocant la superfície

.IN.- It is used for three-dimensional places, when we talk about the position of somebody or something in a volume as surrounded or placed. dins rodejat

We will exemplify position as (.) and movement as (→).

.Also notice that **INTO / ONTO** are derived from in-to and on-to, and are used with active and motive verbs, or with verbs related to transformations.
e.g. He translated that German text into English.
He put that heavy box onto the table.

In space a movement in the direction of a space and penetrating it is expressed by IN, but to mark th emphasis on the movement we say INTO a space.

.The opposite of INTO is OUT OF.
.The opposite of ONTO is OFF.

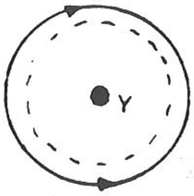
16.12.94

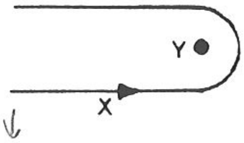
3.I.1. DIMENSION TYPE 0 (a point).

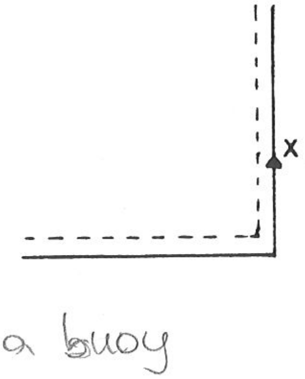
These prepositions show no or unspecified dimension. They refer to a point in space.

.ROUND (AROUND) (.) (→) al voltant de

e.g. X is going round Y. (→)
There are trees (all) around the house. (.)
X is walking round the corner. (→)







A yatch is going round a buoy
around

over - under : sobre - sota

below - above : sobre - sota

behind : darrem

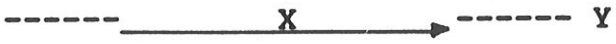
3.I.2. DIMENSION TYPE 1 (a line).

Here we are interested in LENGTH (no width or depth).

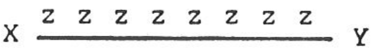
.ALONG (→) (.) a llarg de

This preposition emphasizes the idea of movement following something long that is in front of you (a river, a road, etc). But it also emphasizes the idea of something placed along a line.

e.g. a) X is moving along the road to Y.

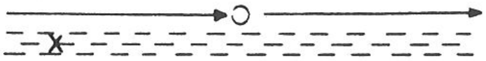


b) There are trees (all) along the road from X to Y.



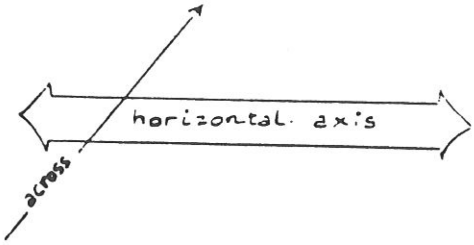
.BY / BESIDE (→) (.) al costat de

e.g. a) X is moving by (or beside) a river.
b) X is standing by (or beside) a river.



.ACROSS (→) (.) a través

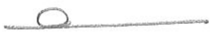
e.g. Road X runs across the frontier (Y).
There is a tree lying across the railway line.



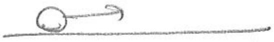
3.I.3. DIMENSION TYPE 2 (a surface).

Here we are interested in LENGTH and WIDTH (no depth or height).

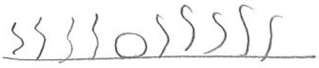
.ACROSS (→) (.)



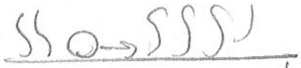
the ball is on the grass



the ball is going across the grass



the ball is in the grass

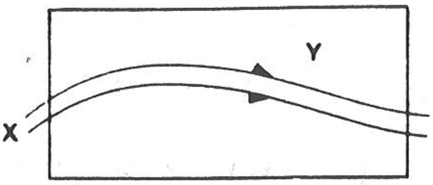


the ball is through the grass

up the stairs ⇔ upstairs

I walked up and down the platform :
jo caminava amunt i avall de l'andana
(com donant voltes) ⇒ és un altre sentit

e.g. a) X is running across Y. (→)

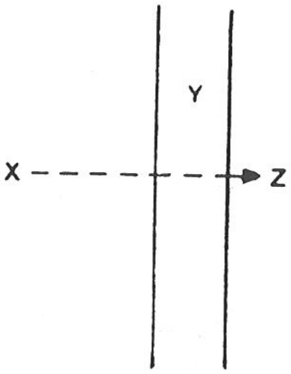


X atravessa la superficie Y

b) Z is just across Y. (.)
X is going across Y to Z. (→)

↓ X atravessa Y per anar Z

Z es just creuant Y

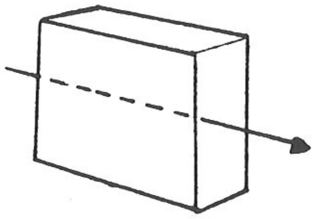


3.I.4. DIMENSION TYPE 2/3 (an area or volume).

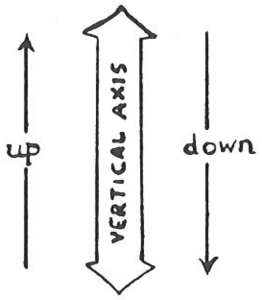
This kind of prepositions concerns HEIGHT, LENGTH & DEPTH.

.THROUGH (→)

e.g. X is going through Y.



.UP, DOWN (→) (.)



We run up/down the hill

"The hill of goodbye".

The shop down the street

(la botiga baixant al carrer, no hi ha moviment en aquest cas)

His office is up the stairs

However : tot i aixì

over : cubrir o tocar alguna cosa

above : no tocar

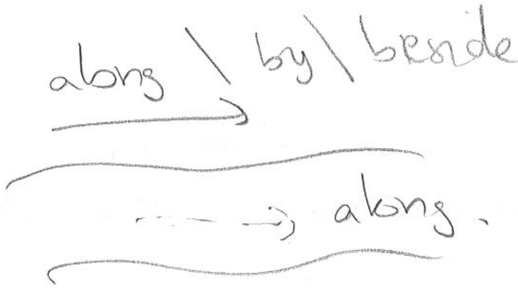
He jumped over the fence (valla)

The child was running over the flowers

There is a bridge | over the river
└ across

A lamp hangs over the table

Riu



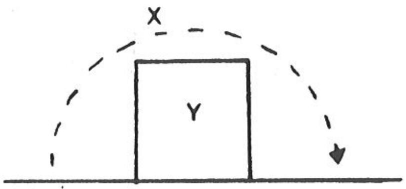
.OVER (→) (.)
.ABOVE (→) (.)

Both mean "higher than" and sometimes either can be used.

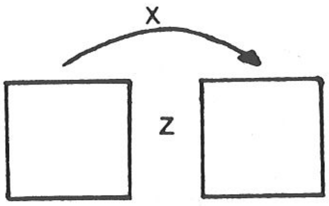
However, **OVER** means touching or covering, and **ABOVE** does not imply contact. **ABOVE** simply means "at a higher point or level".

e.g. **OVER:** X is going over Y. (→)

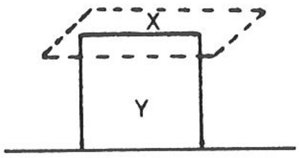
per sobre, no tocant (necessariament)



X is going over Z. (→)

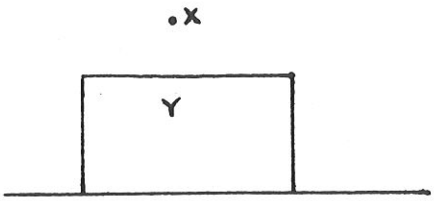


X is over Y. (.)



e.g. **ABOVE:** X is above Y. (.)

sempre sense que hi hagi contacte.



Over – under

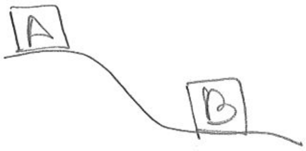
They tend to indicated a vertical relationship or spatial proximity

A The doctor and the policeman were leaning
B over the body. ester inclinat

Above – below

They simply indicate on a higher or lower level than

The plane is 5000 feet above sea



Ten degrees below zero.

⟷

We flew over the city ⇒ volar per sobre la ciutat (relació vertical)

We flew (above / over) the clouds ⇒ volar per sobre dels núvols (sobre un nivell)

↓ descriure una situació

in front of : davant
opposite : de cara a cara.

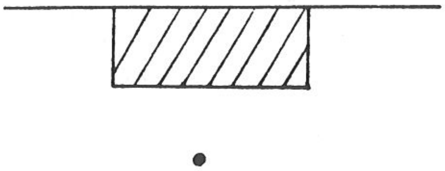
under: pot haver-hi contacte, però no necessàriament

below: no pot haver-hi contacte

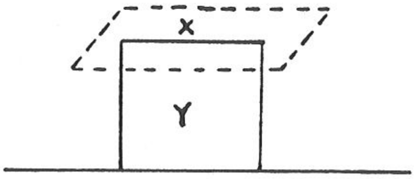
.BELOW (→)(.) above
.UNDER (→)(.) over

UNDER indicates contact, whereas BELOW implies there is always a space between the two surfaces.

e.g. "They live below us" (We live on the 3rd floor and they live on the 2nd.)



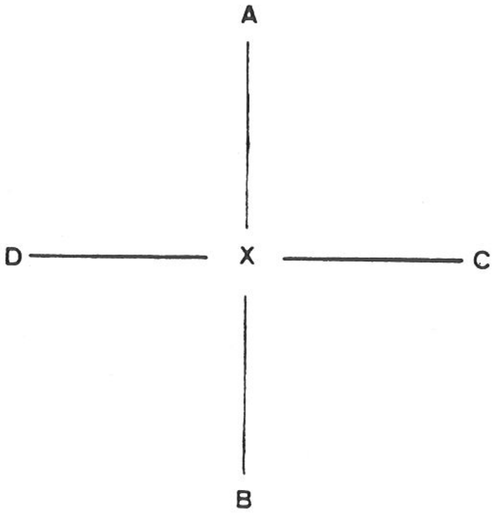
e.g. "The ice cracked under his feet"
Y is under X.



Note: Underneath can replace "under" when strong emphasis on "covering" is required.

.BEHIND, IN FRONT OF (.)

e.g. A is above X / B is below X
D is behind X / C is in front of X



to lend : deixar en prestec
to borrow: agafar en prestec -

13.1.95

3. II. OTHER PREPOSITIONS.

Study the following contrasts:

.OF / FROM.- An important function of **OF** is to express the relationship between the part and the whole. (tot)
e.g. "a quarter of an hour"
The idea of **FROM** indicates source, origin.
↓ font

.BETWEEN / AMONG (⟶) (.)

BETWEEN is usually used to talk about the spatial relationship between two objects. However, it can be used for more than two objects when we have a definite number in mind, whereas with **AMONG** we have no definite number in mind.

e.g. X is standing or moving between two objects.
Y and Z are among more than two.

Y. (X or X) .Z
(.) (⟶)

OF

The door of the room
The lab of the school
The title of the book
} part — tot
composició

FROM

I borrowed the book from the library
A letter from a friend
A teacher from the English department
} font o origen

A ring made of gold
A ring made from a gold medal

ash: cendres
bits of carbon: trossos de carbó
departure lounge: sala de sortides
balloon: globus
to melt: fondre

8: sun té una massa sense una sup. ben definida
earth té una superfície ben definida

10: through \ into \ in
wrecked: naufragat
derrick: perforadora petroli
above: per sobre
insulator: aïllant
wire: fil alambric, cable
vessel: got
whole: tota

nedar - navegar: sempre IN

2.12.94

EXERCISES.

1) Fill in the blanks with a suitable preposition. (See 3.I).

1.- He usually comes to\from Vilanova by train.
2.- They are at the airport, in the departure lounge.
3.- There are millions of electric lamps in the world.
4.- They had to separate the bits of carbon from the ash.
5.- The word nicotine comes from the name of Jean Nicot.
6.- Light usually moves in a straight line.
7.- The balloon went up suddenly to the sky.
8.- Helium was first found in the sun, and then it was found on the earth.
9.- The balloon fell onto the ground, and some of the ice melted.
10.- A long journey into space is not possible yet.
11.- When the house caught fire most people in the house ran out of it.
12.- He turned the telescope from one star to the other.
13.- The mirror was lying on the ground.
14.- The switch is fixed on\in\at the wall.
15.- The heavy bag fell onto the floor and the top opened suddenly.
16.- We cannot change wood into mercury.
17.- That great ship was sailing in the sea.
18.- The petroleum flowed out of the wrecked ship into the sea.
19.- The oil rushed out of the hole to the derrick above.
20.- Heavy oil does not easily turn into vapour.
21.- They couldn't make gold from iron in the 15th century, and even now it is impossible.
22.- Power stations are not often built away from (they do) rivers.
23.- A big glass insulator separated the wire from the metal.
24.- The scientist let the liquid run slowly into the vessel.
25.- The whole family watched the programme on the television screen.
26.- Compressed air was pumped into a cylinder and stored there.
27.- The scientist had to turn his face away from the light.
28.- There are millions of stars in the galaxy.
29.- My new PC is on my desk.
30.- He's waiting for me at the station, in the restaurant.
31.- The petroleum that comes out off the ground cannot really be used for anything.
32.- There are some islands in Lake Chad.
33.- This road leads to the frontier.

↓ dur, portar a

muddy : fangós.

to plug up : endollar

35. out : els nens es poden trobar a fora o a dins
la ciutat
in : dins la ciutat

40. along (al llarg de la costa)

to plug in : conectar

to plug into : alguna cosa es conecta a una
xarxa gran

plug up to 3 terminals : endollar de 1 a 3
terminals (mínim - màxim)

to spread : estendre, difondre

ore : mena, mineral

vacuum : buit

to attach : lligar

magnet : imant

vaixell => sempre across

9. El cable condueix a la bateria del llum

over : per tot arreu.

34.- The Statue of Liberty stands on a small island in New York Harbour.
35.- The White Nile meets the Blue NIle in\at Khartoum.
36.- The Dead Sea is a big lake in the Jordan Valley.
37.- The river Jordan runs into the Dead Sea.
38.- The South Pole is 1.000 kilometres from thy coast.
39.- People who visit Switzerland in summer can either swim in the warm lakes or they can sail and water-ski on them.
40.- There is oil 10 miles away from the coast of Nicaragua.
41.- The factory is located at\in a small town, two miles of\away from the main road.
42.- The hot liquid that comes out of a volcano is called "lava".
43.- The jockey fell of the horse onto the muddy ground.
44.- I am touching the screen but I can't see anything on it.
45.- Our plane refuelled in London, on its way from New York to Moscow.
46.- You can plug up to three terminals in the new IBM PC AT personal computer.

13.1.95.

2) Fill in the blanks with a suitable preposition.
(See 3.I. and 3.II.)

1.- Saturn is a planet which moves around the sun.
2.- We spend nearly all our lives on the surface of the earth.
3.- The weight of a pound of sugar in space is not the same as its weight on the earth.
4.- The first flight over across the Atlantic was made in 1919.
5.- The air is less dense above\on a high mountain than it is above\on the sea level.
6.- Nitrogen can be obtained from the air.
7.- There is not much carbon dioxide in the air.
8.- It is not very difficult to turn a liquid into a gas.
9.- This wire leads to the battery of the lamp.
10.- Where did the radiation come from?
11.- The news quickly spread all over the country.
12.- Most metals are obtained from ores.
13.- We all live in the solar system.
14.- We all live on a planet.
15.- Sound travels through the air but not through a vacuum.
16.- If you heat ice, it will turn into water.
17.- There was some dust on the surface of the table.
18.- The engineer attached a magnet at to the end of the cable.

weapons : armes
lens : objectiu (òptica)
unsafe : insegur
sources : fonts, llaumeints
well : font

to hover : helicòpter es queda quiet en l'espai.

undersea : fons marí.

−193°C : (−) ⇔ (minus)
↓ temperatures negatives
restar

bluish liquid : líquid blavós

43 ⇒ Equador punt de referència ⇒ ABOVE

ponts : aer\aeros

banks : marges del riu

19.- The planets in the solar system revolve around the sun.

20.- Blood circulates along through a closed circuit of continuous vessels.

21.- The horse is jumping over the fence.

22.- The cat is in\under the bed and he doesn't want to come out

23.- Many times in his history man has turned valuable scientific discoveries into terrible weapons of destruction.

24.- At first crude oil was just a viscous, dark liquid that came out off the ground and contaminated the water in wells.

25.- Go along the corridor and you'll find the lab at the end of it on your right-hand side.

26.- When you come out off the station you will see the school in front of you.

27.- When temperatures fall bellow zero, it is really cold.

28.- That ship travelled along\by the coast from Tossa to Sitges.

29.- The new helicopter hovered over us.

30.- If Tom is in front of Mary, then Mary is behind Tom.

31.- In a camera light enters through the lens.

32.- Gases usually go up.

33.- There was a bridge over across that river but it is old and unsafe.

34.- He ran down the stairs to meet her. He was on the 2nd floor and she was on the 1st.

35.- When a material is transparent, it means you can see through it.

36.- The Museum Victor Balaguer is just across the street.

37.- It's always nice to walk up\down\ up and down along las Ramblas.

38.- They drove along the main road until they found the village they were looking for.

39.- Many scientists have always wanted to build a city under the sea.

40.- If you live near the airport, you'll hear noisy planes flying over our houses everyday.

41.- You cannot see through translucent materials but the light passes through them.

42.- If the temperature of oxygen falls bellow -183ºC, it changes its composition completely, from a colourless gas into a bluish liquid which is highly magnetic.

43.- The system METEOSAT is a geostationary satellite located 22,500 miles above the Equator.

44.- Under the Sahara there are enormous sources of oil, minerals and natural gas.

45.- It is not pleasant driving across\through a big city on weekdays.

46.- There is a nice, long bridge over across San Francisco Bay.

47.- Winds of 150 kilometres an hour blow in\from the North Pole.

48.- There are always people walking by\beside along the banks of the river Neva in Leningrad.

narrow : estret
waves : onades

AMONG : Nº INDETERMINAT

BETWEEN : Nº DETERMINAT

to blow : bufar
mahogany : caoba
wooden board:
well: font
carafe: pot.
fill: omplir.
updated : actualitzar
flat : desinflades
publisher : editor
fix : correclar

49.- In 1849 more than 500 ships sailed out, off from San Francisco Bay across the narrow entrance --The Golden Gate.
50.- You can run into really dangerous water going along\down the River Senegal.
51.- The East River in New York flows under the Verrazano bridge.
52.- Some parts of Holland are bellow the sea level.
53.- A woman called M. Walker first sailed across the Atlantic to America single-handed.

55.- The hovercraft is the fastest and more comfortable vehicle to go across the English Channel.
56.- The hovercraft travels well over waves or small obstacles.
57.- When the laser is used as a transmitter, it sends telephone calls through an ultra-thin glass-fibre in the form of digital computer information.

20.1.95

3) Fill in the blanks using FROM / OF / BETWEEN / AMONG. (See 3.II.)

1.- The white, milky liquid obtained from rubber trees is called latex.
2.- Plants take in carbon from the air during photosynthesis.
3.- This table is made of mahogany wood.
4.- That table was made from an old strong wooden board.
5.- The water-tank is full of rain water.
6.- The water from the rain is called rain water.
7.- Asexual reproduction is particurlarly common among plants.
8.- If Tom is sitting beside Anne, and Anne is sitting beside Bill, then Anne is sitting between Tom and Bill.
9.- Luxemburg lies between Belgium, Germany and France.
10.- That scientist came back from the U.S.A., and he was happy to be among friends again.
11.- Fill the carafe with water from the well.
12.- Transmissions from the METEOSAT Satellite are virtually continuous and updated hourly.
13.- The wheels of this car are too flat.
14.- Crude oil represents only 18% of the energy used in China.
15.- There is always a letter from the publisher in almost all the magazines.
16.- The head of the maintenance department is not in now.
17.- I know somebody from the maintenance department that can fix that for you.

networks for electronic banking : xarxes bancàries

largest : gran, enorme ≃ big.

18.- People in the tropics make roofs for their houses from the leaves of coconut trees.
19.- Chemically there is no difference of the gas, the liquid and the solid.
20.- The BBC's complex technical equipment is among the most advanced in the world.
21.- Among banks that have their own networks for electronic banking, one of the most progressive is the C. Bank.
22.- Lake Victoria is between Kenya, Uganda and Tanzania.
23.- Leeds is among the largest, industrial towns in England.

4) Complete the passage about a telephone exchange with these prepositions:

by
through
from
to
in
of
over

Each suscriber telephone is connected to a central office that contains switching equipment, signalling equipment and batteries that supply direct current to operate the telephone.

Each subscriber telephone is connected ...to.... the central office .... a local loop ..by...... two wires. To connect the calling phone .... the called phone, switches .... the central office respond .... the dial pulses or tones .... the calling telephone. When the connection is established, the two telephones communicate .... transformer coupled loops using the current supplied .... the central office batteries.

24.2.95
REPASSAR

UNIT 4.

4. TIME ORDER IN THE DESCRIPTION OF PROCESSES.

.Time order refers to both chronological time and process time, which can be found in technical discourse.

In this unit we will focus on **descriptive processes**, where a series of steps, leading to a predetermined objective, are developed.

1.- Verb tenses used are either PRESENT SIMPLE, when describing experiments, or PAST SIMPLE,when giving a report. (informe)

e.g. The valve opens, allowing the liquid to flow.
e.g. That factory produced the best car of their days.

2.- We can also contrast the use of PAST SIMPLE or PRESENT PERFECT.

e.g. At the beginning they used only heavier materials.
e.g. New lighter alloys have begun to be used since 1985.

3.- PASSIVE FORM is also intensively used when describing processes.

e.g. Once the engine is started, the cooling system must be put at work.

The passive form will be dealt with in UNIT 6.

4.I. **PRESENT PERFECT**. Structure.

.It consists of the auxiliary HAVE / HAS + Past Participle of a given verb.

I	have	
You	have	
He	has	+ PAST PARTICIPLE
We	have	
You	have	
They	have	

Contracted form: I've worked
He's worked

e.g.

TO WORK	worked	worked	(reg. verb)
TO SPEAK	spoke	spoken	(irr. verb)
Infinit.	S. Past	P. Part.	

.Negation:

I haven't worked / spoken → have + not

He hasn't worked / spoken → has + not

.Question:

You have worked / spoken.
Have you worked / spoken ? Yes, I have.
No, I haven't.

He has worked / spoken.
Has he worked / spoken ? Yes, he has.
No, he hasn't.

NOTE: There is a whole list of participles of irregular verbs at the end of this unit.

EXERCISES.

1) **Make negations and questions with these sentences:**

-We have read that book several times.

We haven't read that book several times

Have we read that book several times? ?

-They have taken a new course on Chemistry.

They haven't taken a new course on Chemistry

Have they taken a new course on Chemistry! ?

-He has bought a new computer.

He hasn't bought a new computer

Has he bought a new computer ?

-You have repeated the experiment in the lab.

You haven't repeated the experiment in the lab.

Have you repeated the experiment in the lab ?

-Since 1965, satellites have become increasingly important for long distance communications, especially across the oceans.

- - - , satellites haven't become . . .

Have satellites become . . . . . . ?

-Many of the world's telecommunications administrations have explored other digital solutions.

~ - - - administrations haven't explored . . .

Have the world's telecom . . . ?

-Computers have created very little unemployment up to now.

Computers haven't created . . .

Have computers created . . . ?

-Computers have become cheaper and more compact since the development of the chip.

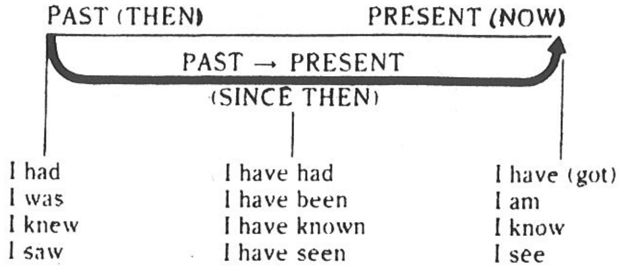
Computers haven't become . . . .

Have computers become cheaper . . .

SINCE : amb data
FOR : també amb passat

4.II. USES OF THE PRESENT PERFECT.

a) Continuation up to the present:



e.g. I've had this PC for three years.
I've known her for a long time.
He's been here for three weeks. (He's still here)

b) When you are not interested in telling when something happened. You are more interested in the result of the action.
e.g. The Government has increased the price of alcohol.

If we are interested in the action (we want details about when, where, who, etc.), we use the SIMPLE PAST.
e.g. The Government increased the price of alcohol last week.

quan s'indica temps es passa el passat

More examples to see the contrast:
e.g. I read the instructions last night. (time given)
I've read the instructions but I still don't understand them. (time is not given)

c) With SINCE / FOR.
e.g. I have known her for years.
I have known her since 1975.

d) With EVER in questions. o NEVER
e.g. Have you ever seen a U.F.O.?
Has he ever done that?

EVER
PREGUNTAR (SOMETIMES)
AFIRMAR (ALWAYS)

e) With HOW LONG in questions.
e.g. How long have you been there?
How long have you studied English?

f) With ALREADY / YET / STILL and JUST.
e.g. He has already finished his work.
He hasn't finished his work yet.
He still hasn't finished his work.
He has just finished his work.

to test : probar
to develop : desenvolupar
century : segle.
to supply : proporcionar
advice : consell
aid : ajud, socors
to carry out : du a terme

EXERCISES.

2) Fill in the blanks using the Present Perfect of the verbs in brackets.

1.- I (have) have had this printer for two years.

2.- He (study) has studied English since he was 17.

3.- That scientist (discover) has discovered a new method.

4.- That student (break) has broken an expensive microscope.

5.- Have you ever (test) tested that machine?

durant quant temps ↑

6:_ How long has he (study) studied English for?

7.- She has just (finish) finished her studies.

8.- They (be) have been in London for two weeks.

9.- We (not do) haven't done our exercises.

10.- A German engineer (design) has designed a new kind of engine.

11.- The telephone system (develop) has developed very quickly in the last few years.

12.- Some companies (never use) have never used that system.

13.- Has anybody ever (take) taken part in an experiment?

2) In the following sentences, put the verbs in brackets into the Present Perfect Tense:

1.- The field of Telecommunications (make) has made great progress in the last twenty years.

2.- Scientists (study) have studied the universe for many centuries.

3.- That organization (supply) has supplied advice and aid to several countries.

4.- Since it was founded in 1943, that organization (carry out) has carried out many projects designed to improve electronic components.

establishing : fundar
pattern: model
resources : recurs
certain : segur, cert
crop : conreu
pool : juntar , mancomunar

5.- Money is a factor which (play) have played an important part in establishing the pattern of modern scientific investigation.

6.- During the last few years, several countries (pool) have pooled their resources to carry out certain types of scientific investigation more efficiently.

7.- Recently, more than forty countries (co-operate) have co-operated in the projects connected with the International Engineering Year.

8.- Agricultural and engineering experts (make) have made great advances in using desert areas for crop production during the last few decades.

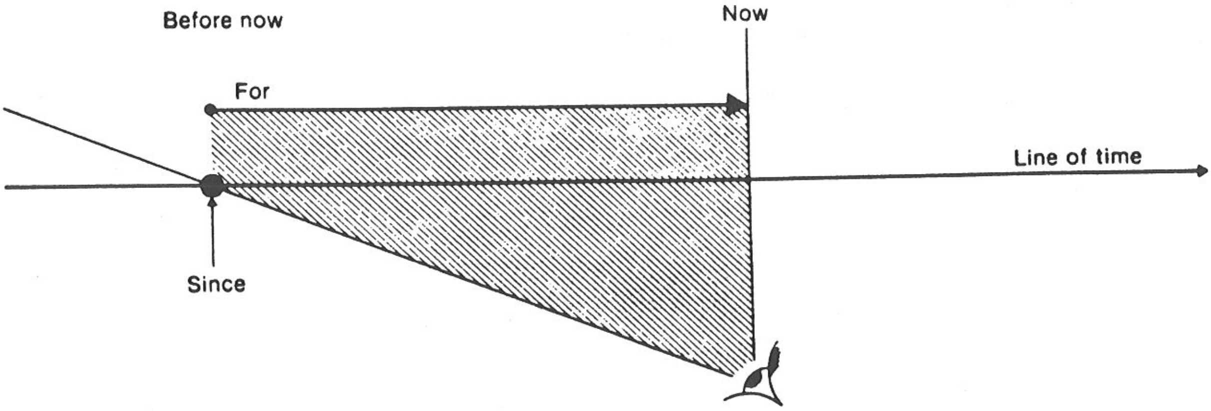
4.III. SINCE & FOR IN THE PRESENT PERFECT.

.We use **SINCE** when we talk about a point of time to say when something began.

e.g. I have lived here since {
1975.
May.
summer, etc.

.We use **FOR** when we talk about a period of time and say how long something has been going on for.

e.g. I have known her for {
years.
weeks.
a few hours, etc.



EXERCISES.

1) Rewrite these sentences using FOR in sentences with SINCE, and using SINCE in sentences with FOR.

1.- I've had this PC since 1987.
I've had this PC for years

2.- I haven't studied English since last Monday.
I haven't studied English for a few days

3.- I haven't come to Vilanova for a week.
I haven't come to Vilanova since last week

They have ↑ been testing

ALREADY

4.- They haven't revised those theories since the 19th century.
They haven't revised those theories for one century

5.- He hasn't been to the lab for two days.
He hasn't been to the lab since Monday

6.- They haven't done their exercises since the day before yesterday.
They haven't done their exercises for two days

7.- I haven't developed that technique for a year.
I haven't developed that technique since 1994

8.- We have been waiting for 6 hours.
We have been waiting since this morning

9.- They have been studying English for 5 years.
They have been studying English since 1990

3.3.95.

4.IV. ALREADY, YET & STILL. JUST.

Adverbs of time such as already, yet & still are also used to express time order.

-**ALREADY** → It means "before now". Already is usually used in positive statements.

.It goes after TO BE:
e.g. I'm } already working.
He was }

.With compound verbs (auxiliary verb + participle) it goes between the auxiliary (e.g. has / is) and the participle.

Auxiliary		Participle
is / are	ALREADY	testing
has /have		tested

e.g. The machine is already working.
They have already tested the new microscopes.

.With simple verbs already goes before the verb.
e.g. They already know that.

ALREADY +
YET − ?
STILL + − ?

My brother is 18 but he still behaves as a child

The new factory hasn't begin to work yet ↑ dones una informació.

The new factory still hasn't begun to work
↓ indica sorpresa, la demostra.

-YET → It is used in negative sentences and in questions (compare already). It is usually placed at the end of the sentence.

e.g. The new factory hasn't begun to work YET.
Has the new computer arrived YET? No, not yet.

-STILL → It means "that something is the same as before". It can be used in positive statements --when an action is continuing up to the present--, in questions and in negative sentences.

- Positive statements:
  - .After TO BE; e.g. I'm still...
  - .With compound verbs, still goes between the auxiliary and the participle.

Auxiliary		Participle
is / are was / were	STILL	testing

e.g. They are still testing the machine.

- Questions:

e.g. Was he still there?
Was the machine still being tested?

- Negative sentences:
  - .STILL goes before the negative auxiliary.

STILL +	CAN'T	work
	DON'T	"
	HASN'T	worked
	HAVEN'T	"

e.g. The new factory still hasn't begun to produce anything
They still haven't developed their theory.
He still can't see his mistake.

research : investigació
evidence : evidència, indicis
elementary particle : partícula elemental
to put forward :
to suggest : suggerir

EXERCISES.

1) Put already, yet & still in the correct place in the sentences below.

1.- (Already) The research team has produced evidence about a new elementary particle.
The research team has already produced evidence about a . . .

2.- (Yet) That scientist hasn't made experiments on corrosion in metals.
That scientist hasn't made experiments on corrosion in metals yet.

3.- (Already) He has put forward a theory about the structure of atoms.
He has already put forward a theory about the structure of atoms

4.- (Still) Our students haven't revised a number of concepts about the nucleic acid.
Our students still haven't revised a number of . . . .

5.- (Yet) We haven't suggested a hypothesis about the origins of earthquakes.
We haven't suggested a hypothesis about the origins of earthquakes yet

6.- (Still) That machine is being repaired.
That machine is still being repaired

7.- (Yet) Have they given a description of the effects of ultra-high speeds on human beings?
Have they given a description of the effects of ultra-high speeds on . . yet?

8.- (Still) Those scientists wanted more money for their experiments.
Those scientists still wanted more money . .

to lauch : llençar, posar-se en marxa

networks : reds

data : dades

alloys : al·leacions

-JUST → This is a very common word to express the idea that something happened a moment ago or very recently.

e.g. My computer has just broken down.
(It broke down a moment ago)

I've just phoned the technician.
(I phoned the technician a moment ago)

EXERCISES.

1) Rewrite these sentences using JUST as in the example.
e.g. The technician arrived 5 minutes ago.
The technician has just arrived.

1.- More modern machines began to appear last year.
More modern machines have just begun to appear

2.- The use of computers at home became very important last year.
The use of computers at home has just become very important

3.- They bought a few computer magazines this morning.
They have just bought a few computer magazines

4.- The launching of space satellites began only a few years ago.
The launching of space satellites has just begun

5.- Some networks were designed last year for data transmission only.
Some networks have just designed last year for date transmission only

6.- Many different transmission systems started to be used in telecommunications technology a few decades ago.
Many different transmission systed have just started to be used in tele - -

7.- The telefax service emerged in the market a few years ago.
The telefax service has just emerged in the market . . —

8.- New alloys were put into use some months ago.
New alloys have just put into use some —

9.- He finished reading that book on Electrical Engineering yesterday morning.
He has just finished - —

to undergo : experimentar
purpose : propòsit
decrease : disminuir

I've lived in Vilanova for 10 years. P.P

I lived in Vilanova for 10 years P.S.

He has seen a meteor (at some time) P.P.

He saw a meteor last week P.S.

ADVERBIALS

P.P.	P.S.
since	yesterday
up to now	in 1980
lately	from 1985 to 1995
never	3 years ago.
ever	

for
this month

silici : silicon
silicona : silicone

4.V. PRESENT PERFECT / PAST SIMPLE.

-PAST SIMPLE → When we talk about a past event whose action is situated in the past and is now finished and complete.

e.g. A.B. Strowger's automatic exchange system underwent several modifications from 1950 to 1982.

-PRESENT PERFECT → When we talk about events that started in the past but still affect the present situation. In other words, these are not finished or complete events.

e.g. But the principle of automatic exchanges has remained the same ever since.

We also use the Present Perfect when we do not give details about when something happened. We are just interested in the fact.

Contrast:
e.g. In 1964 a third generation of computers began to emerge.
A new generation of computers has begun to emerge.

EXERCISES.

1) Put the verb in brackets into the Past Simple or the Present Perfect according to the meaning.

1.- Charles Babbage (produce) produced the first general purpose digital computer.

2.- Babbage (produce) produced the first general purpose digital computer in 1822.

3.- Babbage's computer, unfortunately, (never, be) has never been used.

4.- Modifications to telephone circuits (make) have made it possible to use the telephone system for transmitting electronic data.

5.- The low cost of producing silicon chips (bring) has brought electronic technology into our everyday life.

6.- Since the 1950s, the size of computers (decrease) has decreased considerably.

capable : capaç
store: provisió
devices : aparell
simultaneously: simultaneament
to disappear: desapareixer
exchanges : centrals

7.- The first telecommunications satellite (be) was launched in 1965.

8.- Since then, satellite communications (become) have became essential to many fields of technology.

9.- A computer capable of creating a work of art (not yet, be developed) hasn't been developed yet.

10.- The first electronic computer (use) has used electron tubes to make and store its calculations.

11.- The ability of the computer to service many input and output devices simultaneously (make) has made data communications essential.

12.- Bell (speak) spoke the first word on the telephone in 1876.

13.- Over the last few years, electromechanical exchanges (begin) has begun to disappear.

14.- That scientist (live) has lived (viu) lived (mort) in Barcelona all his life.

15.- In the early telephone exchanges, all calls (go) went through the operator.

16.- He (work) has worked (si) worked (NO) in that office for two years.

17.- With digital techniques, telephone exchanges (just, undergo) have just underwent another great change.

18.- Strowger (patent) patented his idea in 1889.

19.- I (already, see) have already seen that film about Bell.

huge: enorme
supplies: provisió,
widely: generalment
rapidly: rapidament
source: font
to provide: proporcionar
chart: taula, gràfica
also: tambe
trend: tendència
likely: verosímil
such as: tal com
slice: part
large: gran
demand: petició

since ⇒ PRESENT PERFET

* present doncs
hi ha now

10.3.98

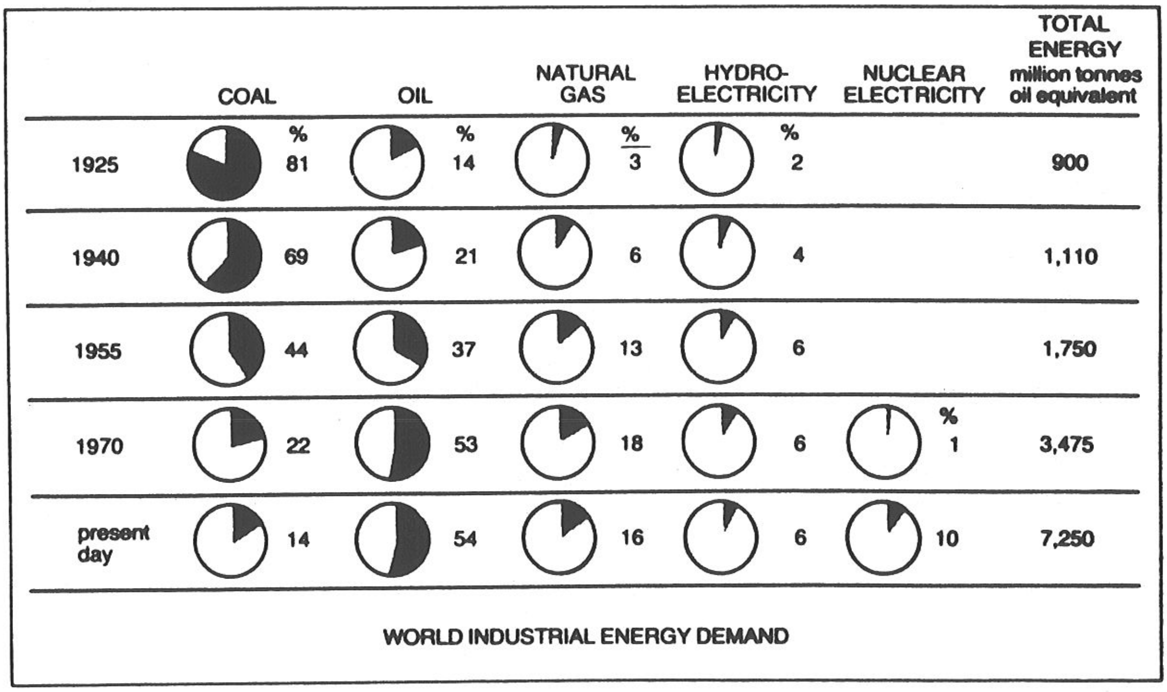
2) Read the text and according to the chart put the verbs in brackets into the Past Simple, the Present Perfect tense or the Simple Present.

ENERGY DIVISIONS.

How does modern industry get the huge supplies of energy it needs? Here is how the energy cake has been (be) divided up since 1925. As you can see coal was (be) the most widely used fuel before the middle of this century. However, since the 1950s the use of coal has declined (decline) rapidly, and oil and natural gas have gradually replaced (gradually replace) it as the main energy source. They now * provide (provide) about three-quarters of the world industrial energy supplies.

The chart also shows (show) that the use of hydro-electricity grew (grow) between 1925 and 1955, but since then it has stayed (stay) at a figure of 6%. Nuclear power provided (provide) only a fraction of the industrial energy supplies in 1970, but now it provides (provide) 10% of the need.

In the last 60 years the world's industrial energy demand has increased (increase) by 800%, and this trend is likely to continue. Fuels such as oil and gas will run out during the next 50 years, so we will have to find new ways of getting the energy we need (need). The energy pie of 2025 will probably include a large slice of solar power.



	COAL %	OIL %	NATURAL GAS %	HYDRO-ELECTRICITY %	NUCLEAR ELECTRICITY %	TOTAL ENERGY million tonnes oil equivalent
1925	81	14	3	2		900
1940	69	21	6	4		1,110
1955	44	37	13	6		1,750
1970	22	53	18	6	1	3,475
present day	14	54	16	6	10	7,250

WORLD INDUSTRIAL ENERGY DEMAND

beam : raig
end : final, extrem
flash : llampec
bursts : explosió
strength : intensitat, força
useful : util
solve : solucionar
valuable : valuós
blind : cec\encegar
evil : dolent

17.3.95

3) Read the text and fill in the blanks using either the Simple Past or the Present Perfect in each case.

LASERS: A NEW LIGHT IN THE WORLD.

In 1960 an American physicist, Theodore Maiman, (build) built an interesting new apparatus to produce a very strong beam of light. The centre of the apparatus (be) was a ruby crystal about 4 cm in length and 0.5 cm in diameter. Both ends (be) were covered with silver. Around the crystal (be) was a flash tube which constantly (produce) produced very powerful bursts of light.

The principle of the laser (or Lightwave Amplification by Stimulated Emission of Radiation), invented in 1958 by Charles Townes, another American is that **the atoms of crystal like the ruby crystal can be excited by strong light and can then store this light, amplify it and emit an immensely powerful beam, stronger than the light produced on the surface of the sun.** This light consists of only one colour, and not of many colours like sun light.

Light of this strength could be very useful and some scientists (already, find) have already found many different applications for it. One of the most useful applications could be in communications. It is more difficult for light to travel long distances than it is for radio waves, but it (be) has been calculated that a laser beam travelling through an enclosed tube could carry as much information as 80 million TV channels! This could help to solve some of the world's communication problems.

Laser, like radio and TV before it, is going to be an extremely important technological advance and, like them, will probably change many aspects of our lives before the end of the twentieth century. But many times in his history man (turn) has turned scientific discoveries into terrible weapons of destruction. The laser can be very valuable, but it could also be a terrible weapon. Some scientists (start) started all this some time ago and laser guns (already, be) have already been developed which could blind or kill an enemy at a great distance, or shoot down an aeroplane or inter-continental missile, but their effectiveness is limited by certain atmospheric conditions like clouds. Perhaps this is the "death ray" which we (read) have read * about in "The War of the Worlds" or in children's comics. Once again man will have to choose between using an invention for good or evil.

* les dues opcions està bé

read

4) According to the text "Lasers", what is the principle of the laser?

a) The atoms of a strong light can be excited, stored, amplified and emitted with a ruby crystal to produce a powerful beam stronger than the light of the sun.

[✓ b)] Strong light can excite the atoms of a ruby crystal. Once stored and amplified, this light can emit a beam that is even stronger than the light produced on the surface of the sun.

c) The light produced on the surface of the sun can be excited, then a ruby crystal stores this light to emit a very powerful beam.

d) A ruby crystal excites the atoms of a strong light producing a very powerful beam that is stronger than the light on the surface of the sun.

5) Name some laser applications.

- long distance comunications \ - holography
- medicine (surgery (cirugia)
- weapons (to attack or to defence) : laser guns
- CD
- for cutting metal plates
- for measuring distances

6) What other scientific discoveries has man turned into terrible weapons of destruction?

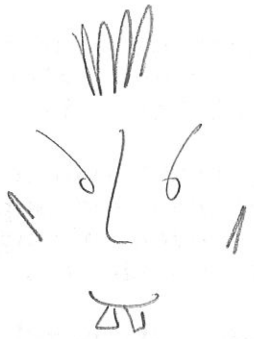
laser guns

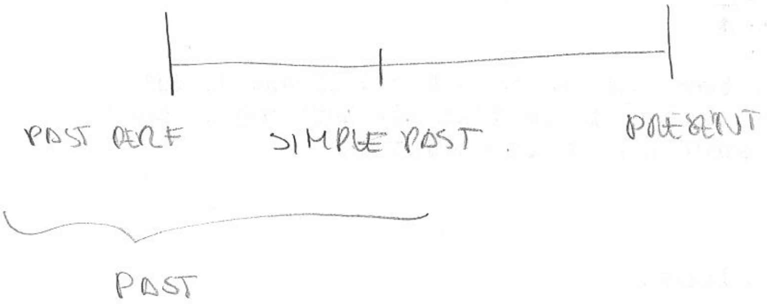
nuclear power

gunpowder

vaccinated:
safe: segur
sure verificar
success: exit

} estar segur de l'èxit





I $\overset{2}{\underline{\text{went}}}$ back home because I $\underset{1}{\underline{\text{had}}}$ $\underset{1}{\underline{\text{forgotten}}}$ the keys.

When he ~~had~~ $\underline{\text{obtained}}$ all the necessary data, he published has results.

↓ BEFORE + PAST SIMPLE

When ⟺ As soon as ⟺ After

at once: desseguida

10.3.98

4.VI. PAST PERFECT.

.This tense is formed by **HAD** plus the **PAST PARTICIPLE** of the main verb.

had worked

Negation: had not or hadn't worked

Question:

e.g. Had he obtained all the necessary data before he published his results? Yes, he had.

.The main function of the Past Perfect is to indicate that in two or more connected actions, the one in the Past Perfect is the event that happened first.

e.g. When he had obtained all the necessary data,

he published his results.

First came the obtention of the data (verb in **Past Perfect**), **then** the publishing of the results (verb in **Simple Past**).

.Note that the connection between the events is often indicated by an adverb of time such as when, as soon as, after, before.

EXERCISES.

1) In the following sentences, say which event happened first:

1.- They $\overset{1}{\text{had visited}}$ Berlin and then they $\overset{2}{\text{visited}}$ Paris.
2.- They had been vaccinated and they were safe.
3.- We had asked the professor about the voltage, and we knew what to do.
4.- The scientist had tested the apparatus, and so they felt sure of success.
5.- They could start the experiment at once because the liquid had already boiled.

gain : guany

knowledge: coneixement, notícia

boiled point

to carry out : realitzar, dur a terme.

to give off : emetre, desprendre

set : aparell

2) Put the verbs below into the right tenses. Each sentence should contain a Past Perfct and a Simple Past Tense.

1.- After the machine (be) had been brought into the lab, that scientist (carry out) carried out the experiment.

2.- Because that scientist (do) had done wonderful things, evryone (think) though he was a magician.

3.- Before Madame Curie (start) started work, Becquerel (discover) had discovered that uranium gave off rays.

4.- Before radium (be) was found, the Curies (work) had worked for several years.

5.- After radium (be) had been found, it (be) was used in medicine.

6.- Aeroplanes first (flow) flew in the twentieth century, but balloons (go) had gone up before that.

7.- When we (turn on) had turned on the radio set, we (can) could hear the music.

8.- After he (fix) had fixed the test tube over the flame, he (leave) left it there.

9.- He (study) had studied elementary algebra before he (start) started the calculus.

10.- Men (make) had made tools of bronze before iron (be) was found.

11.- Men (live) had lived for thousands of years before the first telescope (be) was made.

12.- Long before men (make) made fires, nature (make) had made them.

13.- They (read) read the book that Aristotle (write) had written.

14.- When they (gain) had gained some new knowledge, the book (be) was rewritten.

15.- They never (dream) dreamed\dreamt of questioning the truth of the statements that Aristotle (make) had made.

16.- He (tell) told other people that he (test) had tested the speed.

As soon as : tan aviat com
researcher : recerca
to refuse : renunciar
to allow : permetre
trails : proves
complete : completo
in spite of : a pesar de
bent : doplegat
strain : tensió
re-straighten : redreçar
perform : executar
fact : rentat

Contrastar dues accions, la més antiga amb
PAST PERFEC i la més propera PAST SIMPLE

datum : singular
data : plural

17.3.95

17.- Galileo (think) though that Aristotle (make) had made a mistake.

18.- That part of the world (be) was known in 1750 because no one (explore) had explored it before then.

19.- Many radar stations (be) had been built before the war (begin) began.

20.- After the technician (repair) had repaired the computer, I (start) started to work with it.

21.- When the technician (arrive) arrived to repair the computer, I (already go) had already gone home because it was too late.

22.- As soon as the investigator (discover) has discovered his mistake, he (make) made the necessary corrections to his data.

23.- The authorities (begin) began to attack Galileo as soon as he (publish) had published his new cosmological theories.

24.- The accident occurred because the new aircraft (be) had been put into operation before it (be) was tested sufficiently.

25.- The medical researcher (refuse) had refused to allow his new drug to be used until he (complete) complete all the necessary trials.

26.- In spite of the fact that the young scientist realized that he (use) had used the wrong method in his investigations, he (allow) allowed his results to be published.

27.- During an experiment, a certaiun piece of metal bent under the strain to which it (be) was subjected. When the engineer (re-straighten) re-straightened it, he (find) found that it (lose) had lost some of its original strength.

28.- Success (come) came after we (perform) had performed the experiment 20 times.

29.- The engine (break down) broke down after it (complete) had complete all the reliability tests.

30.- After the properties or characteristics of the new material (be) had been worked out theoretically, they (be) were tested experimentally.

field : camp, especialitat,
undertake : acometre
beforehand : amb antelació
meantime : temps mitjà , mentrestant.
blow out : apagada

31.- The field studies we (undertake) had undertaken last year (be) were very successful because they (be) were carefully planned beforehand.

32.- The construction of the bridge (begin) began as soon as the engineers (make) had made the necessary calculations.

33.- It (be) was necessary to repeat the experiments because some of the original data (be) had been lost.

34.- Unfortunately, it (be) was difficult to repeat the experiments because the original conditions (change) had changed in the meantime.

3) Put the correct tenses in the following sentences, either Past Perfect or Simple Past.

1.- He said that no scientific experiments (be) had been made so far.

2.- Before the end of 1956 a bad blow out (destroy) destroyed equipment worth $ 2,000,000.

3.- They knew that there were three planes because they (see) had seen the reflections on the radar screen.

4.- Once all the data (be) had been analysed, they developed their theory.

5.- They (modify) modified the new model after they had obtained all the necessary information.

Alphabetical list of irregular verbs

Infinitive	Past tense	Past participle
arise	arose	arisen
awake	awoke	awoken
be	was	been
bear	bore	borne
beat	beat	beaten
become	became	become
begin	began	begun
bend	bent	bent
bet	bet, betted	bet, betted
bid	bade, bid	bid
bind	bound	bound
bite	bit	bitten
bleed	bled	bled
blend	blended; blent	blended
blow	blew	blown
break	broke	broken
breed	bred	bred
bring	brought	brought
broadcast	broadcast	broadcast
build	built	built
burn	burnt, burned	burnt, burned
burst	burst	burst
buy	bought	bought
cast	cast	cast
catch	caught	caught
choose	chose	chosen
cling	clung	clung
clothe	clothed, clad	clothed
come	came	come
cost	cost	cost
creep	crept	crept
cut	cut	cut
dare	dared	dared
deal	dealt	dealt
dig	dug	dug
do	did	done
draw	drew	drawn
dream	dreamt, dreamed	dreamt, dreamed
drink	drank	drunk
drive	drove	driven
dwell	dwelt	dwelt
eat	ate	eaten
fall	fell	fallen
feed	fed	fed
feel	felt	felt
fight	fought	fought
find	found	found
flee	fled	fled
fling	flung	flung
fly	flew	flown
forbid	forbade, forbad	forbidden
forecast	forecast	forecast
forget	forgot	forgotten
forgive	forgave	forgiven
forsake	forsook	forsaken
freeze	froze	frozen
get	got	got
give	gave	given
go	went	gone
grind	ground	ground
grow	grew	grown
hang	hung, hanged	hung, hanged
have	had	had
hear	heard	heard
hide	hid	hidden
hit	hit	hit
hold	held	held
hurt	hurt	hurt
keep	kept	kept
kneel	knelt	knelt
knit	knitted, knit	knitted, knit
know	knew	known
lade	laded	laden
lay	laid	laid
lead	led	led
lean	leant, leaned	leant, leaned
leap	leapt, leaped	leapt, leaped
learn	learnt, learned	learnt, learned
leave	left	left
lend	lent	lent
let	let	let
lie	lay	lain
light	lit	lit
lose	lost	lost
make	made	made
mean	meant	meant
meet	met	met
mistake	mistook	mistaken
mow	mowed	mown
pay	paid	paid
put	put	put
quit	quit	quit
read [ri:d]	read [red]	read [red]
rid	rid	rid
ride	rode	ridden
ring	rang	rung
rise	rose	risen
run	ran	run
saw	sawed	sawn
say	said	said
see	saw	seen
seek	sought	sought
sell	sold	sold
send	sent	sent
set	set	set
sew	sewed	sewn
shake	shook	shaken
shed	shed	shed
shine	shone	shone
shoe	shod	shod
shoot	shot	shot
show	showed	shown

Infinitive	Past tense	Past participle
shrink	shrank, shrunk	shrunk
shut	shut	shut
sing	sang	sung
sink	sank	sunk
sit	sat	sat
sleep	slept	slept
slide	slid	slid
sling	slung	slung
slink	slunk	slunk
slit	slit	slit
smell	smelt, smelled	smelt, smelled
sow	sowed	sown
speak	spoke	spoken
speed	sped, speeded	sped, speeded
spell	spelt, spelled	spelt, spelled
spend	spent	spent
spill	spilt, spilled	spilt, spilled
spin	spun, span	spun
spit	spat	spat
split	split	split
spoil	spoilt, spoiled	spoilt, spoiled
spread	spread	spread
spring	sprang	sprung
stand	stood	stood
steal	stole	stolen
stick	stuck	stuck
sting	stung	stung
stink	stank, stunk	stunk
stride	strode	stridden
strike	struck	struck
string	strung	strung
strive	strove	striven
swear	swore	sworn
sweep	swept	swept
swim	swam	swum
swing	swung	swung
take	took	taken
teach	taught	taught
tear	tore	torn
tell	told	told
think	thought	thought
throw	threw	thrown
thrust	thrust	thrust
tread	trod	trodden
upset	upset	upset
wake	woke	woken
wear	wore	worn
weave	wove	woven
weep	wept	wept
win	won	won
wind	wound	wound
wring	wrung	wrung
write	wrote	written